



# **NAVAL POSTGRADUATE SCHOOL**

**MONTEREY, CALIFORNIA**

## **THESIS**

### **A RESOURCE NETWORK STRATEGY FOR AFGHANISTAN**

by

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December 2013

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**A RESOURCE NETWORK STRATEGY FOR AFGHANISTAN**

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## **ABSTRACT**

With NATO planning to complete the withdrawal of most troops from Afghanistan by the end of 2014, both Afghanistan and the Coalition need to define a positive long-term vision for the country. In this thesis, I evaluate a proposed approach to achieving such a vision—something I call the “Resource Network Strategy.” In this approach, Afghan and Coalition efforts to develop the country’s considerable natural resource endowment are integrated with the U.S. Special Operations Forces continuing village stability operations in a way that establishes a sustainable long-term counterinsurgency effort that will defeat the enemy at the village level while securing the support of Afghanistan’s central government and minimizing the costs to the U.S. and its allies.

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## TABLE OF CONTENTS

<b>I.</b>	<b>OVERVIEW: A RESOURCE NETWORK-BASED COUNTERINSURGENCY STRATEGY FOR AFGHANISTAN.....</b>	<b>1</b>
<b>II.</b>	<b>A BRIEF OVERVIEW OF AFGHANISTAN.....</b>	<b>17</b>
<b>A.</b>	<b>ETHNICITIES AND TRIBES.....</b>	<b>17</b>
<b>B.</b>	<b>ISLAM IN AFGHANISTAN .....</b>	<b>19</b>
	1. Popular Islam .....	22
	2. Political Islam or Islamism in Afghanistan .....	23
	3. Tribal Islam .....	24
	4. Textual Islam.....	26
	5. Sufism.....	27
	6. Reformist Fundamentalism.....	28
	7. Deobandism .....	29
	8. Wahhabism.....	29
	9. Shia and Sunni Groups.....	30
	10. Pan-Islamism .....	31
<b>C.</b>	<b>GEOGRAPHY .....</b>	<b>33</b>
<b>D.</b>	<b>ECONOMIC AND SOCIAL DEVELOPMENT .....</b>	<b>38</b>
	1. Industries and Labor Force .....	38
	2. Exports, Imports and Trade Partners .....	38
	3. The Afghan Poppy Harvest.....	39
<b>E.</b>	<b>AFGHAN EDUCATION.....</b>	<b>40</b>
<b>F.</b>	<b>AFGHAN HEALTH AND HEALTH CARE SYSTEMS .....</b>	<b>42</b>
<b>G.</b>	<b>AFGHAN CORRUPTION.....</b>	<b>44</b>
<b>III.</b>	<b>AREAS OF INTEREST: SECURITY CONDITIONS IN AFGHAN REGIONS WITH SIGNIFICANT RESOURCE ENDOWMENTS .....</b>	<b>49</b>
<b>A.</b>	<b>CONCLUSION .....</b>	<b>69</b>
<b>IV.</b>	<b>THE LOGIC OF THE RESOURCE NETWORK STRATEGY .....</b>	<b>71</b>
<b>A.</b>	<b>VSO SITES AND ARTISANAL MINING .....</b>	<b>71</b>
<b>B.</b>	<b>“MINING BRINGS MINING”.....</b>	<b>74</b>
<b>C.</b>	<b>LARGE-SCALE MINING.....</b>	<b>74</b>
<b>V.</b>	<b>THE RESOURCE NETWORK STRATEGY .....</b>	<b>77</b>
<b>A.</b>	<b>STRATEGIC GOALS AND OBJECTIVES.....</b>	<b>77</b>
<b>B.</b>	<b>EXTERNAL ENVIRONMENT AND OPERATIONAL CONSTRAINTS.....</b>	<b>79</b>
<b>C.</b>	<b>STRATEGIC CONCEPT .....</b>	<b>80</b>
	1. End-state .....	84
	2. “Military” End-state.....	85
<b>D.</b>	<b>DETAILS OF STRATEGIC INTERVENTIONS BY PHASE .....</b>	<b>86</b>
<b>E.</b>	<b>CONCLUSION .....</b>	<b>101</b>
<b>VI.</b>	<b>CONCLUSION AND SUMMARY OF RECOMMENDATIONS .....</b>	<b>103</b>

<b>APPENDIX            THE   COMMERCIAL   AND   INDUSTRIAL   USES   OF</b>	
<b>                         AFGHANISTAN’S NATURAL AND MINERAL RESOURCES. ....</b>	<b>113</b>
<b>LIST OF REFERENCES .....</b>	<b>121</b>
<b>INITIAL DISTRIBUTION LIST .....</b>	<b>137</b>

## LIST OF FIGURES

Figure 1.	The Disposition and Number of ALP by District in Afghanistan .....	4
Figure 2.	Map of USGS's 24 AOIs. ....	7
Figure 3.	Afghanistan's Roads. ....	8
Figure 4.	These pictures illustrate mining and processing efforts in early 2012, Khas Kunar District, Kunar Province, Afghanistan. The top left is a chromite mining area in the district. The top right picture is of ALP members overseeing chromite ore processing at FOB Penich. The bottom left picture is of USSOF facilitating chromite ore processing at FOB Penich. The bottom right picture is of a TFBSO geologist assisting Afghans ore processing. ....	14
Figure 5.	Afghanistan's Ethnic and Tribal Disposition and Breakdown. ....	19
Figure 6.	Examples of differences between the Pashtunwali Codes and the Sharia laws. ....	26
Figure 7.	Afghanistan's Administrative Boundaries, Key Population Centers and Capital. ....	34
Figure 8.	Afghanistan's terrain from sea level to >4,000 meters ASL. ....	36
Figure 9.	An assessment of Afghanistan's security situation by the United Nations. Department of Security Services in March, 2010. ....	50
Figure 10.	This map of Afghanistan illustrates the country's known mineral occurrences (small dots) and 20 areas of priority identified by the USGS and Afghan Geological Survey Joint Mineral Assessment Team and have "promise for economic occurrences of different mineral types (large symbols)." ....	70
Figure 11.	An illustration of the strategic concept for the Resource Network Strategy. ..	86
Figure 12.	The top left picture is an example of artisanal mining in Mes Aynak, Logar Province Afghanistan. The top right picture illustrates an Afghan coal miner's hands in Karkar Province, Afghanistan. The bottom left picture illustrates "illegal" artisanal mining in Afghanistan. The bottom right picture illustrates an Afghan man using dynamite, an old and unsophisticated mining technique. ....	94
Figure 13.	A UEPS Terminal and Cards. ....	97
Figure 14.	An example of an Afghan Village Website. ....	98
Figure 15.	The top left picture illustrates a small-scale mining project in Bamyan Province, Afghanistan. The top right picture illustrates a small-scale mining activity in Afghanistan. The bottom left picture illustrates Afghans mining at the Abkhorak mine in northern Afghanistan. The bottom right picture illustrates gold mining at Nooraba/Samti in north Afghanistan on the Panj River. ....	100

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## **LIST OF ACRONYMS AND ABBREVIATIONS**

ALP	Afghan Local Police
AOI	area of interest
CIA	Central Intelligence Agency
CIDG	civilian irregular defense groups
COIN	counterinsurgency
DoS	Department of State
FOB	forward operating base
NATO	North Atlantic Treaty Organization
NGO	non-governmental organization
RNS	Resource Network Strategy
SOF	Special Operations Forces
TFBSO	Task Force for Business and Stability Operations
USAID	United States Agency for International Development
USGS	United States Geological Survey
USSOF	United States Special Operations Forces
VSO	village stability operations

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## **I. OVERVIEW: A RESOURCE NETWORK-BASED COUNTERINSURGENCY STRATEGY FOR AFGHANISTAN**

In this thesis, I propose and evaluate the potential efficacy of a new counterinsurgency strategy that leverages the economic potential embodied in Afghanistan's natural resources and the unique operational capabilities of United States Special Operations Forces (USSOF). The central goal of this new strategy is to establish a sustainable long-term counterinsurgency effort that will defeat the enemy at the local village level while securing the support of Afghanistan's central government and minimizing the human and financial costs to the United States and its allies.

While implementation of the proposed strategy involves many "moving parts," the idea is conceptually simple. I am proposing that the USSOF, which currently conducts village stability operations (VSO) in roughly 100 villages throughout Afghanistan, position its assets to sites that will secure access to that country's natural resource wealth. Following the strategic shift of the VSO network, USSOF and its associated Afghan forces, the Afghan local police (ALP), would then implement policies aimed at enabling the local population to conduct small-scale mining activities, while, at the same time, the Afghan government, with assistance from USAID, would take advantage of the enhanced security environment in these areas to develop the infrastructure and legal processes needed to commence responsible large-scale commercial mining.

What would such an effort achieve? First, it would drive a wedge between the majority of the Afghan people and hardcore insurgents formally affiliated with the Taliban, the Haqqani network, and al Qaeda. The "silent majority" of villagers, who reject insurgent ideology but tolerate the local presence of the insurgents because they have little to gain and much to lose should they confront them, would have a good reason to stand up and make their voices heard. They are likely to be joined in this resistance to the enemy by many of the less "hardline" insurgents—often "accidental guerrillas"<sup>1</sup> who

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<sup>1</sup> David Kilcullen, *The Accidental Guerrilla: Fighting Small Wars in the Midst of a Big One* (Oxford: Oxford University Press, 2009).

are motivated by personal issues or tribal rivalries to side with the insurgents. They will now have economic options more attractive than participating in the fighting. Second, such an approach would create a positive dynamic of growing economic contact and interdependence between rural Afghanistan, its urban centers, and the central government. This contact will engender the social, cultural, and economic change that would allow Afghanistan to “knit” itself together into a more coherent country, a requirement if the campaign in Afghanistan is to succeed in the long term. Finally, such a strategy would require a bare minimum of American troops and would largely be self-financing since the economic dimension of the effort would involve development efforts financed by revenue from mining rather than foreign aid. Hence, it would be credible for the US to make a long-term commitment to such a strategy, even in the face of considerable domestic war weariness.

Decision makers will not adopt a strategy because its author makes claims about how well it would work. First, it must be established that the proposal is feasible and can actually be implemented. Second, there must be reason to believe that the strategy will work as described.

Let us first consider the question of implementation. The proposal requires two elements. The first is a working USSOF program of local counterinsurgency. The second is the presence of a meaningful and accessible natural resource endowment in Afghanistan. Both of these elements are in place.

Since 2009, USSOF elements have been embedded in numerous villages throughout Afghanistan, conducting village stability operations (VSO). VSO efforts are based on a number of elements, including (i) enablement of local governance; (ii) recruitment and training of home-grown security forces that are collectively known as the Afghan local police (ALP); and (iii) goodwill efforts and micro-level socio-economic development efforts. The closest analogue to the USSOF’s VSO effort is the Vietnam-

era Civilian Irregular Defense Groups (CIDG), a Special Forces program widely regarded as one of the important American successes during the Indochina conflict.<sup>2</sup>

Currently (fall 2013), USSOF elements are embedded in over 90 Afghan villages, recruiting, training, and advising ALP forces.<sup>3</sup> These activities are relatively evenly distributed throughout Afghanistan, and are usually located in the vicinity of the country's "Ring Road" and larger population centers. In addition, 136 Afghan districts are authorized these security forces, and 84 (62 percent) of these districts have operational ALP forces.<sup>4</sup> Figure 1 illustrates the location of the 12,900+ ALP by district in Afghanistan as of March, 2012.<sup>5</sup> By July 2013, these numbers had increased to ~22,000, but there are no maps that are currently available to illustrate their disposition.<sup>6</sup>

It is important to note that USSOF forces establish a VSO site only if they are accepted by the local community. Hence, a major element of the program is to build networks of trust and understanding prior to establishment of a VSO site. Later, the USSOF element focuses on deepening its ties with the village in which it physically embedded while developing new relationships or connections with Afghans in neighboring villages and districts. These USSOF elements are small (12–30 personnel), travel light (often by foot or horseback), and require minimal logistical support since they generally buy food and supplies in local markets.

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<sup>2</sup> Mark L. Brown highlights numerous similarities between VSO in Afghanistan and the Vietnam era CIDG approach by the U.S. Army Special Forces in "Village Stability Operations: An Historical Perspective from Vietnam to Afghanistan," *Small Wars Journal* (March 2013), accessed July 26, 2013, <http://smallwarsjournal.com/jrnl/art/village-stability-operations-an-historical-perspective-from-vietnam-to-afghanistan>.

<sup>3</sup> Lisa Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," Working Paper WR936, RAND Corporation, Santa Monica, CA, 2012, accessed August 26, 2013, [http://www.rand.org/pubs/working\\_papers/WR936](http://www.rand.org/pubs/working_papers/WR936), 9; ISAF source document, September 26, 2012.

<sup>4</sup> Lisa Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal* (December 2012), accessed on August 26, 2013, <http://smallwarsjournal.com/jrnl/art/vsoalp>. 9.

<sup>5</sup> Lisa Saum-Manning illustrates the dispositions and amount of ALP that USSOF are recruiting, training, advising and assisting in Afghanistan in "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal* (December 2012), accessed on August 26, 2013, <http://smallwarsjournal.com/jrnl/art/vsoalp>.

<sup>6</sup> Saum-Manning, "VSO/ALP."

Coalition military commanders generally regard the VSO program as highly successful, having noted the relatively good military performance of ALP units, the valuable intelligence that local villagers have provided, the decreases in insurgent activities typically after VSO sites are established, and the small resource burden that has been required to implement and sustain the program. That said, VSO efforts have engendered some opposition in the Afghan government due to anxiety that ALP units may evolve into militias that exacerbate Afghan divisions rather than facilitate unified nation-building. Such opposition must be addressed if VSO operations are to become the centerpiece of counterinsurgency efforts in Afghanistan.

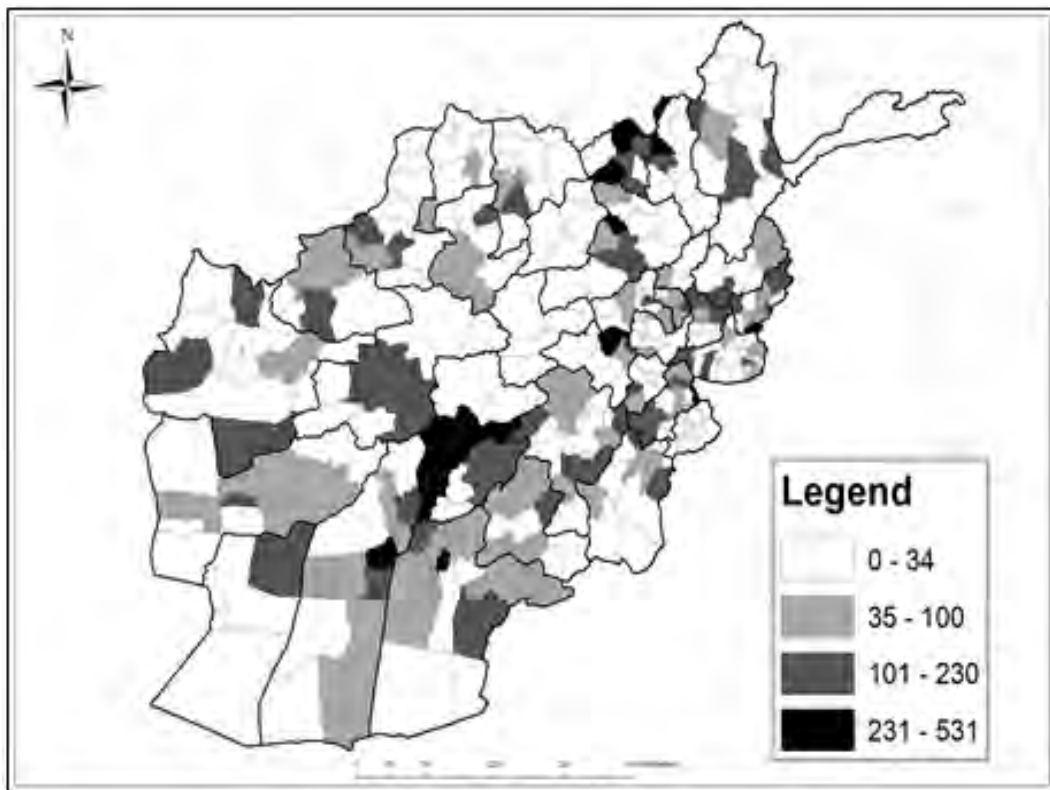


Figure 1. The Disposition and Number of ALP by District in Afghanistan<sup>7</sup>

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<sup>7</sup> Map 1 is a modification of the map illustrated in Saum-Manning's 2012 article. The numbers of ALP listed (not illustrated) by district in Saum-Manning's map are illustrated in Map 1 by color codes and district. Saum-Manning, "VSO/ALP."

While USSOF have put in place the counterinsurgency capabilities required to implement the strategy proposed in this thesis, the United States Geological Survey (USGS) and its Afghan partners have been busy validating the scale of Afghanistan's natural resource endowment. To be sure, USGS scientists and other geologists had long suspected that Afghanistan was a country rich in natural resources and minerals.<sup>8</sup> But until recently only limited efforts have been made to survey those resources using the modern resource assessment methodologies that have recently become available.<sup>9</sup> To rectify this, the USGS began to conduct rigorous assessments of Afghanistan in 2006 and 2007, using the pioneering but limited work that had been done by Soviet experts between the 1950s and 1985.<sup>10</sup>

Based on the promising results of these preliminary efforts, the USGS and the Task Force for Business and Stability Operations (TFBSO) established a formal agreement with the Afghan government in 2009 to validate and accurately assess the potential for fuel and nonfuel natural resource exploitation in Afghanistan. During this time period the USGS collected an immense amount of historical and earth sample data, and in 2011, the USGS and TFBSO published a report delineating 24 important areas of interest (AOIs) for resource exploitation, and 33 subareas within these AOIs.<sup>11</sup> All of these AOIs (and their subareas) were selected as areas with the potential to support commercial mineral exploitation. According to the USGS report, "these AOIs have existing outcropping mineralization with favorable geometries and simple metallurgical ore types; these parameters therefore may translate into lower capital costs, lower lead

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<sup>8</sup> Sh. Chmyriov Abdullah and V. I. Dronov (eds.), *Geological Map of Afghanistan* (in Russian language, 1977, Annex no. 1, Book 1), accessed on August 26, 2013, <http://www.bgs.ac.uk/downloads/start.cfm?id=930>; Stephen G. Peters et al., eds. *Preliminary Non-Fuel Mineral Resource Assessment of Afghanistan 2007*, Open File Report 2007-1214 (Afghanistan Project No. 157) (Reston, VA: U.S. Geological Survey, 2007), 1-3.

<sup>9</sup> Stephen G. Peters et al., eds., *Preliminary Non-Fuel Mineral Resource Assessment*, vol. I-II, Open File Report 2007-1214 (USGS Afghanistan Project No. 157) (Reston, CA: U.S. Geological Survey, 2007), 2.

<sup>10</sup> *Ibid.*, 1.

<sup>11</sup> Stephen G. Peters et al., eds., *Summaries of Important Area for Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, vol. I-II, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), iii-33.

times, and short payback periods of future mineral development.”<sup>12</sup> The general locations, or AOIs, of these natural resources and minerals are illustrated in Figure 2.

The scale of the resources identified by the USGS/TFBSO study is breathtaking, with the gross aggregate value of Afghanistan’s natural resources estimated as being greater than \$1 trillion.<sup>13</sup> This has led to considerable international interest in the Afghan mining initiatives.<sup>14</sup> As of May 13th, 2013, the Afghan Ministry of Mines and Petroleum had signed over 300 mining related agreements with local and foreign mining companies who are seeking to extract these resources.<sup>15</sup> In spite of this, little actual progress has been made in the development of Afghanistan’s mining industry. In addition to obvious problems such as security conditions and remote locations, all experts I contacted regarding mining in Afghanistan cited confusion about the Afghan Mining Law as being the largest barrier to continuing forward with larger-scale mining.<sup>16</sup>

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<sup>12</sup> Ibid., iv.

<sup>13</sup> Steve Kral, “Minerals Key to Afghanistan,” *Mining Engineering* 63, no. 4 (April, 2011): 136; Global Data Ltd., “Afghanistan’s Mining Industry on the Path of Development” (United Kingdom: London, October, 2012), accessed July 7, 2013, <http://search.proquest.com.docview/1284703508?accountid=12702>, 1.

<sup>14</sup> The Islamic Republic of Afghanistan Ministry of Mines and Petroleum website lists numerous articles of foreign investors who are exploring opportunities for mining in Afghanistan. For more information see <http://mom.gov.af/en>.

<sup>15</sup> Ministry of Mines and Petroleum website listed 313 mining related contracts at various stages of progress in Afghanistan. Islamic Republic of Afghanistan, Ministry of Mines and Petroleum, “Ministry of Mines and Petroleum,” accessed July 7, 2013, <http://www.mom.gov.af/en>.

<sup>16</sup> Emails and conversations with an anonymous source who is the 2013 TFBSO Director of Development; Michael Chornack a current USGS hydrologist and 2010–2012 member of the TFBSO; Bob Miller a miner, geologist and senior advisor for the TFBSO 2010–2012; Steve Peters a current USGS geologist and 2010–2012 member of the TFBSO; and Emily Scott-King the minerals project lead for the TFBSO from 2010–2012.



construction and power projects in Afghanistan.<sup>19</sup> As a result, the country's 2,700 kilometer "ring road" is nearly all trafficable, and the road's 233-kilometer uncompleted stretch in the country's northern region was funded for completion in 2011 by a \$340 million Asian Development Bank donation.<sup>20</sup> USAID's major infrastructure improvement goals in Afghanistan have only partially been met, but signs of infrastructure improvement are clearly visible on the ground. Afghanistan's "ring road," primary, and secondary roads are illustrated on Figure 3.

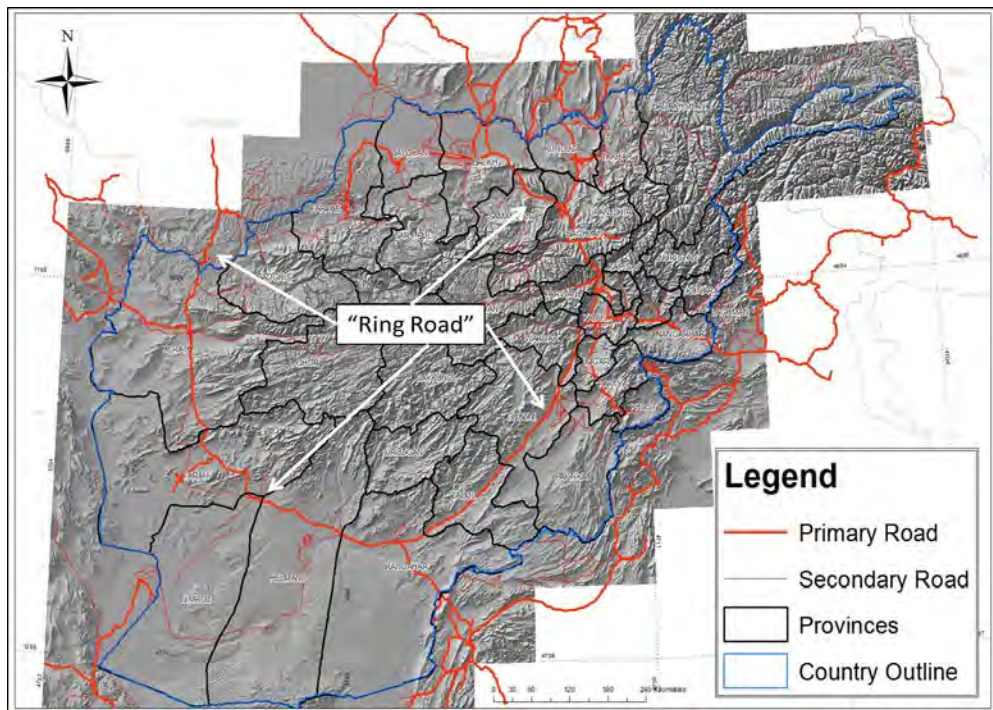


Figure 3. Afghanistan's Roads.

<sup>19</sup> Afghanistan website published its total spending between 2002 and 2011. The value of 27 percent was calculated by adding the total amounts of funding USAID applied towards road construction and power projects between 2003–2011 and dividing that amount by the total amount of spending for the same years (\$4,038 million/\$15,165 million = 26.62 percent rounded to 27 percent), U.S. Agency for International Development, "2002–2011 Spending," accessed on May 27, 2013, <http://afghanistan.usaid.gov/en/about/budget>.

<sup>20</sup> Asian Development Bank, "Asian Development Bank Provides \$340 million to Complete Afghan Ring Road," January 17, 2011, accessed on August 26, 2013, <http://www.adb.org/news/adb-provides-340-million-complete-afghan-ring-road>.



Not everyone sees Afghanistan's large endowment of natural resources as a blessing. A number of observers have argued that Afghanistan, given its low level of political cohesion and social development, is likely to fall victim to the "resource curse,"<sup>21</sup> a set of socioeconomic pathologies associated with economically poor but resource-rich countries. These include the potential for natural resource rents being monopolized by key leaders instead of supporting the country's economic growth and development,<sup>22</sup> the exacerbation of internal conflict, and a "tragedy of the commons."<sup>23</sup> This tragedy could occur when the lands of Afghanistan are taken advantage of by individuals, without any limit, and no single individual (or group) having "official" claim to them as they use portions for their own benefits, stripping them of their value that should be shared by many individuals (or groups). In the absence of regulation or private ownership, Afghanistan could potentially face a legacy of environmental degradation.<sup>24</sup>

These are legitimate concerns that must be considered as Afghanistan proceeds with development of its natural resources. Afghanistan's Ministry of Mines and

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<sup>21</sup> Richard Auty, *Sustaining Development in Mineral Economies: The Resource Curse Thesis* (London: Routledge, 1993), 1–10.

<sup>22</sup> Stephen Haber and Victor Menaldo, "Afghanistan and the 'Resource Curse,'" *The Wall Street Journal*, July 2, 2010, accessed August 26, 2013, <https://iriss.stanford.edu/sites/all/files/sshp/docs/Haberpercent20andpercent20Menaldopercent20WSJ.pdf>; "Oh Great, Another Congo," *Democracy in America: American Politics* (blog), *Economist*, July 14, 2010, accessed on August 26, 2013, [http://www.economist.com/blogs/democracyinamerica/2010/06/afghan\\_minerals](http://www.economist.com/blogs/democracyinamerica/2010/06/afghan_minerals); J. Edward Conway, "How Afghanistan Can Escape the Resource Curse," *Global Policy Forum*, February 29, 2012, accessed August 26, 2013, <http://www.globalpolicy.org/the-dark-side-of-natural-resources-st/other-articlesanalysis-and-general-debate/51382-how-afghanistan-can-escape-the-resource-curse.html>.

<sup>23</sup> Originally defined and discussed by Garrett Hardin, "The Tragedy of the Commons," *Science*, 162 (1968), 1243–1248.

<sup>24</sup> Ibid.

Petroleum is already negotiating agreements with foreign investors,<sup>25</sup> and there are clear signs that problems involving transparency and access to natural resource rents have already occurred.<sup>26</sup>

Fortunately, the Afghan government and partner nations are already trying to deal proactively with the challenges of transparency and corruption engendered by mining development. For example, the Afghan Ministry of Mines and Petroleum—with the support of non-governmental organization (NGOs) and USAID—is addressing numerous legal aspects of mining,<sup>27</sup> including the need to strengthen the property rights central to avoidance of the “tragedy of the commons.”

Interestingly, a key aspect of Afghan exploitation of its mineral endowment that remains to be addressed is how the interests of local Afghan stakeholders will be safeguarded and incorporated into law. This leads to the second question raised above—why is it likely that the combination of VSO efforts and mineral exploitation will produce a good strategic outcome? To address this, let us first establish that, while formal mining efforts in Afghanistan are bogged down, villagers are busily engaged in small-scale artisanal mining throughout the country, and would be greatly impacted—for better or worse—as major mining initiatives commence.

For example, Dr. Stephen Peters, lead author of the USGS report, explained to me in July, 2013:

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<sup>25</sup> Islamic Republic of Afghanistan, Ministry of Mines and Petroleum, “Ministry of Mines and Petroleum,” accessed August 26, 2013, <http://www.mom.gov.af/en>.

<sup>26</sup> Global Witness highlights the Aynak copper deal between China and the Islamic Republic of Afghanistan and “urges that the contract be published in line with Afghanistan’s commitment to transparency and the Chinese principles of ‘mutual benefit’ and ‘win-win cooperation.’” in “Copper Bottomed? Bolstering the Aynak Contract: Afghanistan’s First Major Mining Deal,” November 20, 2012, accessed on August 26, 2012, <http://www.globalwitness.org/library/copper-bottomed-bolstering-aynak-contract-afghanistanpercentE2percent80percent99s-first-major-mining-deal>. This article, among several other internet postings of China’s involvement with signing deals to mine in Afghanistan, are not listed or addressed on Afghanistan’s Ministry of Mines and Petroleum website.

<sup>27</sup> International Trade Commission, *Mining in Afghanistan: Guide to Conducting Business and Ensuring Compliance* (Washington, DC: Department of Commerce, 2008), accessed August 26, 2013, [http://trade.gov/static/Minerals\\_Law\\_Guide\\_2008.pdf](http://trade.gov/static/Minerals_Law_Guide_2008.pdf), 1; USAID Afghanistan, “Land Reform in Afghanistan,” accessed August 26, 2013, [http://afghanistan.usaid.gov/en/USAID/Activity/186/Land\\_Reform\\_in\\_Afghanistan\\_LARA](http://afghanistan.usaid.gov/en/USAID/Activity/186/Land_Reform_in_Afghanistan_LARA).

Many Afghans are mining in Afghanistan now, but doing it by very rudimentary (placer and artisanal) means.<sup>28</sup> Several Afghan villagers want to mine in a more official capacity, but when asking to do so, they're told not to mine by members of the Afghan Central Government. But, they do it anyway.<sup>29</sup>

Dr. Peters forcefully argued that such small-scale efforts, rather than competing with more formal projects, are actually a necessary stage in the development of the Afghan mining industry, and that small-scale mining was being neglected by Afghanistan's central government because of the lack of experienced mining professionals at the Ministry of Mines and the political disjunction between Afghanistan's government and its rural population. For that reason, he thought that USSOF could play a vital role in overall development of Afghanistan's mining industry if it acted as the promoter and protector of the country's small-scale mining sector.

As I have discovered, such an attempt to leverage a VSO presence in order to facilitate artisanal mining has already taken place, and it appears to have been a major success. Geologist and TFBSO member Bob Miller told me:

In December 2010, members of the Task Force for Business (TFBSO) and Stability Operations approached key leaders from the Special Operations Forces (SOF) and the Ministry of Mines and Petroleum in Afghanistan. The TFBSO understood the extreme relevance behind the natural resource and mineral data produced and validated by the US Geological Survey during the few years prior. Members of the TFBSO asked for access to the Afghan people in order to eventually enable mining, and all parties were completely in favor. In July 2011, the TFBSO met with some SOF operators and one of the Afghan Local Police (ALP) Deputy Commanders that these forces had recruited, trained, and were advising in Khas Kunar District, Kunar Province, Afghanistan. The ALP Commander was very knowledgeable about the locations of chromite in his district. According to

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<sup>28</sup> Afghan artisanal and placer mining methods involve numerous low technology extraction techniques, such as: using shovels, picks and axes for digging; using explosives extracted from unexploded ordinance to reduce heavily mineralized rock formations; and using old mining equipment, some of which is not intended for mining, to extract minerals from the earth. Additionally, artisanal and placer mining techniques often present very high risks to Afghan miners. These Afghan mining techniques were explained by Stephen G. Peters during a conversation with the author and Dr. Jonathan Lipow, University of Nevada-Reno, July 10–12, 2013 and Bob Miller, a TFBSO miner, geologist and advisor from 2010–2012 via email and phone conversations with the author.

<sup>29</sup> Stephen G. Peters, comment on “Are the Afghan Locals Mining Now?” with author and Dr. Jonathan Lipow, University of Nevada-Reno, July 10–12, 2013.

a TFBSO member, he knew where 100 plus chromite mines (see Figure 4) were, and we validated 60 of them. This ALP Deputy Commander had been conducting artisanal mining in the area for several years. By October 2011, Afghan locals from Kunar District were delivering (see Figure 4) chromite ore to forward operating base (FOB) Penich for crushing and separation with simple and effective equipment provided by the TFBSO. In December 2011, members of SOF and the TFBSO trained the locals to crush and separate chromite ore at FOB Penich. In January 2012, the Afghans were on “cruise control,” processing their own chromite ore. The word was spreading among the Afghans to bring their locally collected ore to FOB Penich for processing. The TFBSO determined the ore to be of very high grade and best sold as direct shipping lump ore to obtain the highest prices.

Behind the scenes, members of the TFBSO had reached out to a Swedish mineral processing company and discovered their immediate willingness to buy the Afghans’ chromite. On January 14, 2012, members of the TFBSO and SOF conducted a ceremony at FOB Penich to transfer ownership of the crushing and separating equipment to Afghans. Surprisingly, approximately 60 Afghans from several heavily mineralized areas of eastern Afghanistan attended this ceremony. All of these Afghans were asking the Americans to use their processing equipment, get more of it, and for it to be delivered to their villages. A three-man group of group of miners from Nuristan Province stated, “We have enormous amounts of minerals. If you come to our village and help us, and our village becomes dangerous, we will leave our families with your people. We’ll sacrifice my family to ensure your safety and success in helping us. Please come to our village.”

The Afghans thus proved their intense desire to exploit, process, and sell their minerals. Sadly, when Afghanistan’s Minister of Mines and Petroleum discovered that Afghan locals were actually delivering high-grade chromite ore to FOB Penich, he considered it, “illegal” and ordered that it be stopped until the Afghan Mining Law is completed. Today, the Afghans continue mining various ores and selling numerous minerals extra-legally. Although most troubling, it is being shipped throughout the black markets, mostly to Pakistan with significant benefits to the Taliban.<sup>30</sup>

I have spoken to Emily Scott-King (the project lead for this TFBSO activity), Michael Chornack<sup>31</sup> (a USGS hydrologist that participated in and is very knowledgeable

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<sup>30</sup> Bob Miller (senior TFBSO advisor and geologist), phone conversation with author, 12 August 2012; Bob Miller, email to author, August 14, 2013.

<sup>31</sup> Michael P. Chornack, email message to author, August 13, 2013.

about this activity), and Dr. Stephen Peters (the lead author of the 2007 and 2011 USGS mineral reports). All were familiar with the effort at FOB Penich and validated the story recounted above. Miller also explained that, since the discontinuation of the activity at FOB Penich, “at best, the Afghans are being paid only 50–60 percent of what they should be making on (the sales of) their chromite,”<sup>32</sup> while another TFBSO member stated that “the Afghans are only being paid about 25 percent of what they should be getting for these minerals.”<sup>33</sup>

The experience at FOB Penich in Kunar Province illustrates the great potential embedded in the combination of VSO efforts and small scale mining development in Afghanistan (see Figure 4 to gain a visual perspective on the initiative). It also demonstrates the dangers inherent in ignoring small-scale natural resource development. If the Afghan government and Coalition fail to promote and facilitate local-level informal mining activity, the Taliban would likely fill the vacuum and do so instead. As a result, funds and support would flow to the enemy while the social networks based on economic activity that ought to be developing between Afghanistan’s rural areas and its central government and urban elite would instead develop between these villages and the insurgents. The result would be a strategic defeat that is entirely avoidable.

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<sup>32</sup> Miller, phone conversation.

<sup>33</sup> Conversation between TFBSO member and author, via Skype.com, response to the question, “Are the locals in Afghanistan mining now?”



Figure 4. These pictures illustrate mining and processing efforts in early 2012, Khas Kunar District, Kunar Province, Afghanistan. The top left is a chromite mining area in the district. The top right picture is of ALP members overseeing chromite ore processing at FOB Penich. The bottom left picture is of USSOF facilitating chromite ore processing at FOB Penich. The bottom right picture is of a TFBSO geologist assisting Afghans ore processing.<sup>34</sup>

This thesis is divided into six chapters. Chapter II provides an exposition of Afghanistan's people, religions, geography and economic and social development, their relevance, and how this strategy addresses them. Chapter III examines details of the natural and mineral resources that exist in each of Afghanistan's 24 areas identified by the USGS and an explanation of each of their security situations. Chapter IV utilizes basic economics principles while explaining the most fundamental and economically

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<sup>34</sup> Pictures received from Emily Scott-King and Bob Miller (previous TFBSO consultants) in an email to author on August 14, 2013.

based factor in this strategy's success - "the rational peasant."<sup>35</sup> Applying this factor, an explanation is provided regarding small-scale mining being a necessary step towards large-scale mining, and how the introduction of large-scale mining has the potential to impact Afghanistan socially and economically, secure the country, and result in the insurgency being defeated. Chapter V explores the overall concept, followed by details and implementation mechanics of the proposed resource network strategy (RNS) as the way forward in Afghanistan. This chapter also addresses the impact this strategy will have on short and long-term local and national-level conditions in Afghanistan. Chapter VI concludes this study, addressing possible obstacles to implementation of the strategy, and makes recommendations for the next steps required to make implementation of the Resource Network Strategy a reality.

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<sup>35</sup> Samuel L. Popkin, *The Rational Peasant: the Political Economy of Rural Society in Vietnam* (Berkeley, CA: University of California Press, 1979).

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## II. A BRIEF OVERVIEW OF AFGHANISTAN

This chapter offers an overview of Afghanistan's ethnicities and tribes, Islamic and other religions, geography, and important economic and social characteristics. These aspects of Afghanistan are salient to implementation of the Resource Network Strategy being proposed in this thesis. As these aspects are examined, their relevance to this strategy is explained, followed by how this strategy addresses and aims to positively affect them. Undoubtedly, the personnel carrying out this strategy will be continuously reminded of the numerous and often challenging aspects of Afghanistan.

### A. ETHNICITIES AND TRIBES

The Afghan people are drawn from a remarkably diverse collection of tribes and ethnicities.<sup>36</sup> Afghans have maintained the most influential ability to impact their own future for centuries, and will certainly impact this Resource Network Strategy's application. Afghanistan's population has been estimated to be about 31 million.<sup>37</sup> The country is primarily composed of "5 major ethnic groups and dozens of minor ethnic groups and many of which have not been studied well."<sup>38</sup> The country's largest groups include the Pashtuns, Tajiks, Hazaras, Uzbeks and Aimaqs, and smaller groups include the Turkmen, Baluchs, Nuristanis and Kirghiz (see Figure 5).<sup>39</sup> The largest two of these ethnic groups are the Pashtuns (42 percent) and the Tajiks (27 percent).<sup>40</sup> The majority of the country's Pashtuns live in Afghanistan's south-central regions (see Figure 5),

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<sup>36</sup> Mary Agnello and others, eds., "Afghanistan and Multiculturalism in Khaled Hosseini's Novels: Study of Place and Diversity," *Multicultural Education & Technology Journal* 3, no. 2 (2009): 96–111, accessed July 24, 2013, doi:<http://dx.doi.org/10.1108/17504970910967546>; Bahaudin Mujtaba, "Ethnic Diversity, Distrust and Corruption in Afghanistan," *Equality, Diversity and Inclusion: An International Journal* 32, no. 3 (2013), 245–261, accessed July 24, 2013, doi:<http://dx.doi.org/10.1108/EDI-12-2012-0113>.

<sup>37</sup> Central Intelligence Agency [CIA], "The World Factbook: Afghanistan," 2013, accessed July 31, 2013, <https://www.cia.gov/library/publications/the-world-factbook/geos/af.html>.

<sup>38</sup> Thomas Barfield, *Afghanistan: A Cultural and Political History* (Princeton, NJ: Princeton University Press, 2012), 23.

<sup>39</sup> CIA, "Afghanistan," 2013.

<sup>40</sup> Ibid.

although pockets of them live in the northern regions. Afghanistan's exact population number is difficult to determine with high degrees of accuracy, and descriptions of its varying ethnicities are extremely subjective.

An estimated 76 percent of the population resides in Afghanistan's rural regions, while 24 percent live in urban centers.<sup>41</sup> Fifty percent of the Afghans speak Dari (also called Afghan Persian) as their first tongue, 35 percent speak Pashto (or Pashtun), 11 percent speak Turkic languages, and four percent speak minor languages such as Balochi and Pashai. Many Afghans, however, are bilingual or multi-lingual, and they manage to communicate with each other.<sup>42</sup>

Afghanistan's ethno-linguistic communities are loosely conglomerated and "flatly networked,"<sup>43</sup> as opposed to being hierarchically structured. No one individual or entity speaks for the country, or for that matter, for any of its ethnic groups.

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<sup>41</sup> CIA, "Afghanistan," 2013.

<sup>42</sup> Ibid.

<sup>43</sup> Ashin Adib-Moghaddam suggests that Orwellian theory regarding Islamic cultures "has itself become instantly recognizable in modern media and political discourse as its description of a world of lies, propaganda and indoctrination. Its connotations seem to become even more sinister when it is used to identify, not direct and overt deceit, but the kind of 'thought control' that operates in advanced capitalist societies: more ciphered, clandestine, opaque, *flatly networked*, horizontal, penetrative, global and politically transcendent than that in the intensely vertical and vulgar top-down form indicted in *Nineteen Eighty-Four* (1949) in "Speaking of Islam: An Orwellian Story," *Monthly Review* (October, 2010), accessed August 13, 2013, <http://mrzine.monthlyreview.org/2010/aam31//> 1010.

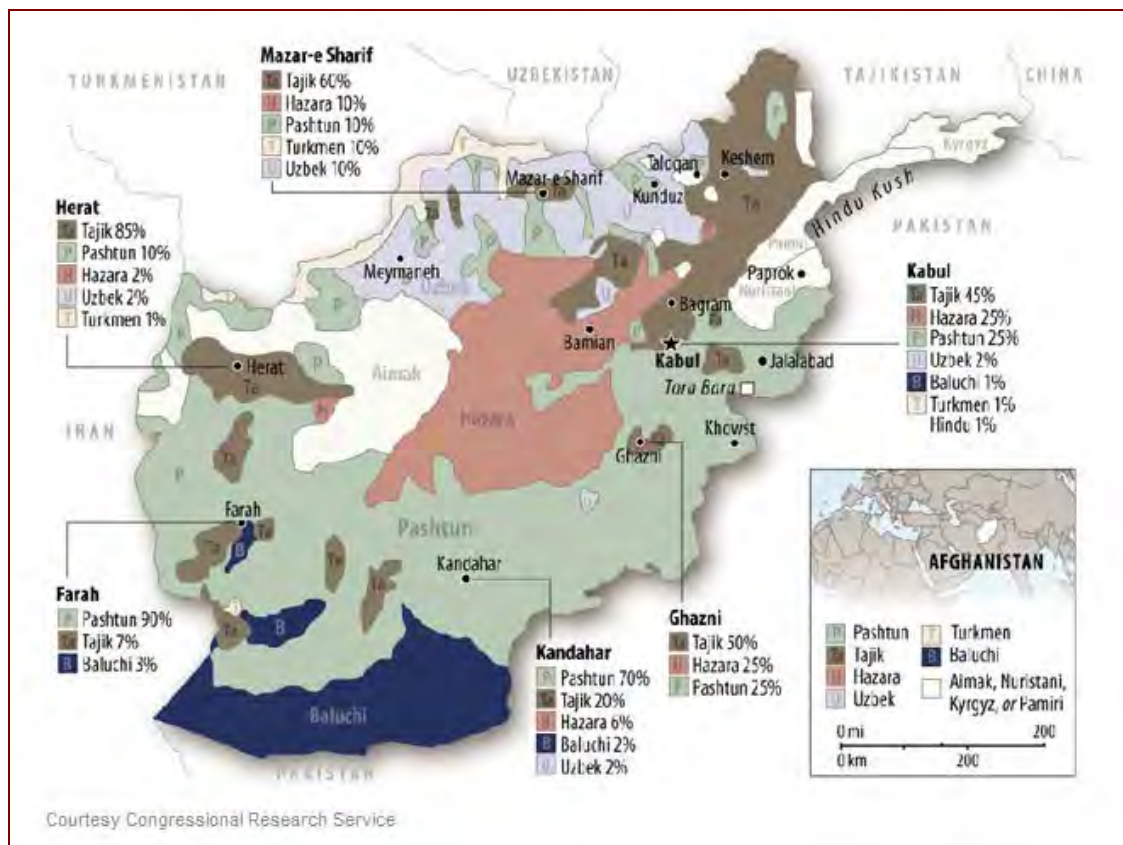


Figure 5. Afghanistan's Ethnic and Tribal Disposition and Breakdown.<sup>44</sup>

## B. ISLAM IN AFGHANISTAN

This section aims to explain Islam in Afghanistan in order to promote a better understanding of the country and the effects of the religion. Afghanistan's primary religion—Islam, has the potential to affect this strategy's execution. Accordingly, the groups and individuals that perform this strategy will be required to remain keenly aware of Islam in Afghanistan, how its practices and ideologies will be affected by this strategy, and the converse, or how its practices and ideologies will affect this strategy. And, if the practitioners of this strategy do not directly acknowledge the religion, they and (or) their parent nations will eventually feel the painful impact of the Afghans that rally in the name is Islam. Islam, and its Afghan followers, must be better understood,

<sup>44</sup> Jayshree Bajoria and Zachary Laub, "The Taliban in Afghanistan," August, 2013, Council on Foreign Relations, accessed August 15, 2013, <http://www.cfr.org/afghanistan/taliban-afghanistan/p10551#>.

acknowledged and respected during the execution of this strategy. Islam is, and will remain, a permanent aspect of Afghanistan, even while it is practiced and acknowledged in several unique ways.

Today, the attitudes of Muslims toward Americans in Afghanistan are diverse. In some areas, the United States' presence is accepted and embraced because of the services they provide, such as increased security, employment opportunities in the ALP, functioning wells and irrigation systems, better roads, and support of local governance. In other areas, the presence and intentions of the United States are highly doubted, heavily resisted by the insurgency, or simply ignored. Generally, the attitudes of Afghanistan's Islamic believers towards Americans are based-upon a very simple question, "What is in this for me?" USSOF, backed by their VSO methodology and networks have positively answered this question for many Afghan locals and villages, including Islamic believers.

Distinctive groups, individuals, or terms used in this section only generally, and do not precisely, represent Islamic practices in Afghanistan. Furthermore, the following groups, individuals, and terms are not distinctive, as some may or may not be used together to describe Islam and other spiritual practices in the country.

Islam was introduced to Afghans from Arabia in the seventh century A.D.,<sup>45</sup> and is interpreted and practiced in many diverse ways. Afghanistan has a handful of Hindus, Sikhs, Jews and Christians, but the majority of Afghans are Muslim; 80 percent are Sunni, and 19 percent are Shia.<sup>46</sup> The religion of Islam saturates the lives of Afghanistan's Muslim populations in various ways, and provides them with a set of emotional, intellectual, behavioral values, or codes.<sup>47</sup> Numerous times throughout history, the various types of Afghan Islamic followers (Muslims) have rallied together during clashes between the country's own tribes and villages and foreign invaders. A

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<sup>45</sup> Nick B. Mills, *Karzai: The Failing American Intervention and the Struggle for Afghanistan* (Hoboken, NJ: John Wiley & Sons, 2007), 4.

<sup>46</sup> CIA, "Afghanistan;" Olivier Roy, *Islam and Resistance in Afghanistan*, 2nd ed. (Cambridge: Cambridge University Press, 1990), 30.

<sup>47</sup> Roy, *Islam and Resistance in Afghanistan*, 30.

few examples of situations when the Afghans rallied and fought in the name of Islam include during their strong resistance against the British during the First Anglo-Afghan War from 1839–1842; during jihad movements (holy wars against “non-believers”) against the Soviets in the 1980s and Americans after 9/11, and during engagements in battles between the Northern Alliance and Taliban before and after 9/11. In each situation, many Afghan Muslims rallied in the name of Islam to expel or eliminate people they considered “non-believers.” Nevertheless, the Islamic codes that drive Muslim behavior are based on the Koran and Sunna,<sup>48</sup> and have continued to provide the Afghan people with their only “source of legitimization based upon universal values.”<sup>49</sup>

Numerous Islamic practices discussed herein most commonly occur in mosques, which are often located near the center point of Afghan villages, ethnic or tribal areas. The mosque is used for performing numerous activities, such as: religious rituals; meetings for locals to discuss problems and news; and often as a place where those passing through can find rest. Those who practice Islam (*umma*) live closest to mosques, the next closest populations are those of other religions, and farthest away are the unbelievers (or atheists). Each day five prayers are broadcast from mosques, meals are offered that culminate yearly at Ramadan, and time honored forms of language, gestures, and courtesies are given to Allah.

As the head of mosques, mullahs oversee several Islamic practices in most of Afghanistan’s metropolitan, villages, tribal, and ethnic areas. More specifically, they interpret Islam and oversee religious rituals such as daily and baptismal prayers, youth catechisms, religious education, marriages, burials, exorcisms and circumcisions.<sup>50</sup> Mullahs also commonly oversee and mediate area disputes, act as area spokesmen, and regulate activities such as medical care. Mullahs are often chosen and known for their piety, wisdom, formal and/or informal education in Islamic tradition and Muslim laws

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<sup>48</sup> The Sunna are everything besides the Koran that came from God’s Messenger; explain and provide details for the laws found in the Koran; provides examples of application of these laws; and are a direct revelation from God, or decisions of the Messenger that were then confirmed by revelation. “What is the Sunnah? (Part 2 of 2): The Sunnah in Islamic Law,” last modified on October 4, 2009, <http://www.islamreligion.com/articles/655/>.

<sup>49</sup> Roy, *Islam and Resistance in Afghanistan*, 30.

<sup>50</sup> Ibid.

(*fiqh*),<sup>51</sup> and in tribal areas most often come from families who have earlier provided them.<sup>52</sup> Mullahs are not members of institutions, are less often linked to the area Islamic religious scholars (*'ulama or pir*), and considered subordinate to them. They are often employed by the village and collect taxes or donations for their support from area locals, although they commonly supplement their livelihood with income earned from their individual skills.<sup>53</sup> The social status of Afghan mullahs is relatively low in tribal areas because of exclusion from tribal communities, and considered more esteemed in other areas where their families have a higher social status.

Islam in Afghanistan does not have a single system of standards, and many of the country's religious, tribal, and ethnic beliefs have opposed each other for centuries. Complicating matters are the often pre-Islamic customs, superstitions and "common laws" practices in the urban and rural areas.<sup>54</sup> Numerous institutions and groups have developed as the result of these customs, superstitions and laws, and have few, if any, commonalities with tribal or Islamic laws.

The social foundations of Afghan Islam exist in various forms, and most often coincide with the tribal or non-tribal, and rural or urban environments it is practiced in. Additionally, links between religion and the Afghan mindset depend on whether groups or individuals follow secular, ideological, traditional or reformist beliefs.<sup>55</sup> Within each of these Afghan groups, religious expressions occur with their own individual subtleties and representations, and are highly dependent upon various interpretations and understanding of Islam.

## **1. Popular Islam**

Popular Islam in Afghanistan is a common understanding of the religion, and does not adhere to the details and variations of Islamic beliefs and practices. This type of

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<sup>51</sup> Ibid., 238.

<sup>52</sup> Ibid., 32.

<sup>53</sup> Ibid.

<sup>54</sup> Ibid.

<sup>55</sup> Ibid.

Islam provides structure for day-to-day life, is represented in the languages, and promotes the country's most prominent Muslim cultural identity.<sup>56</sup> The popular Islamic concept directs and promotes good, and an understanding that compliance with its beliefs will ensure prosperity and deter social injustice.<sup>57</sup> Popular Islam is the religion's most common denominator for all Muslim groups in Afghan society.<sup>58</sup>

Today, Popular Islamists generally tolerate and accept the presence of Americans in Afghanistan. Many of them understand that America's intentions are positive for the country and they are not threatened by Western culture and beliefs. During the implementation of this Resource Network Strategy, it is likely that Popular Islamists will embrace the economic, social, and political benefits that mining bring, because they will bring better lifestyles and livelihoods to many Afghans.

## **2. Political Islam or Islamism in Afghanistan**

Afghan popular Islamic believers, if forced to act out (offensively or defensively) are better explained in the context of Political Islam, or Islamism. More recently, Muslims have been required to adapt to a modern world of nation-states.<sup>59</sup> As the result of these forced changes or adaptations, influential Muslim theorists,<sup>60</sup> professors, and groups have become concerned about the effects nations outside of Afghanistan would have on the religious, political, social, economic and linguistic aspects of Afghan

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<sup>56</sup> Ibid., 30.

<sup>57</sup> Kristin Mendoza, "Islam and Islamism in Afghanistan," Afghan Legal History Project, Harvard Law School, accessed September 21, 2013, <http://www.law.harvard.edu/programs/ilsp/alhp.html>, 2.

<sup>58</sup> Ibid.

<sup>59</sup> Ibid., 8.

<sup>60</sup> Ibrahim M. Abu-Rabi' concluded that Islamic theorists such as the Egypt-based Sayyid Qutb, leader of the Muslim Brotherhood, and Pakistani Abu 'Ala Mawdudu, leader of the Jamaat-e Islami, believed that in order to establish God's sovereignty, it is the duty of Muslims to cut ties with societies that exist within states that are ignorant to Islam; Islamic political parties must be parties of God; Muslim states must be led by "Commanders of the Faithful;" and that justice be established through conformity with Sharia laws. Ibrahim M. Abu-Rabi', *Intellectual Origins of Islamic Resurgence in the Modern Arab World* (Albany, NY: State University of New York Press, 1996), 8.

society.<sup>61</sup> These Muslim theorists have significantly influenced Islamists within Afghanistan for about 60 years. Today, much of this influence is represented in Afghanistan's insurgency.

Political Islamists in Afghanistan, before experiencing the economic, social, and political benefits of mining, could resist the implementation of the Resource Network Strategy. These Islamic believers have experienced "foreign invaders" in the past, and may react similarly to this strategy. The opinions and actions of Political Islamists can be changed through participating in or supporting mining activities and experiencing their accompanying benefits. In the past, insurgents have changed their behaviors when the benefits of supporting local initiatives have exceeded the benefits of supporting insurgencies.<sup>62</sup> Furthermore, organizations such as Hamas and Hezbollah have provided services and incentives for local populations that have heavily swayed the opinions, attitudes, and activities of insurgent groups and their supporting populations.<sup>63</sup> Political Islamists can be influenced by mining-related benefits because these benefits have the potential to exceed any others they've experienced and received by being involved with the insurgency.

### **3. Tribal Islam**

Afghanistan's Islamic society is often, not always, divided among tribal and ethnic lines, and its tribal practices are often inherited from ancestors. The Pashtuns are the country's largest tribal and ethnic group, who less often distinguish between variations in their internal tribal, ethnic and religious backgrounds. The Pashtuns' ancestor, Qays, allegedly received the word of Islam directly from the Prophet

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<sup>61</sup> Ibid.

<sup>62</sup> The insurgency during the Huk Rebellion (1942–1945) lost its momentum when local land rights were addressed in favor of many Filipinos; during the Malayan Emergency (1948–1960) the MPLA's insurgency lost its momentum when Chinese farming and land rights were enabled and supported by the government; and during the Anbar awakening (~2007), Iraq's insurgent attacks greatly reduced, which could be due to better economic conditions in the country, and the increased value of the Iraqi Dinar.

<sup>63</sup> Jonathan Masters, "Hamas," November 27, 2012, Council on Foreign Relations, accessed November 18, 2013, <http://www.cfr.org/israel/hamas/p8968>; Meylani Cammett, "Habitat for Hezbollah," *Foreign Policy* (August 2006), accessed November 5, 2013, [http://www.foreignpolicy.com/articles/2006/08/16/habitat\\_for\\_hezbollah](http://www.foreignpolicy.com/articles/2006/08/16/habitat_for_hezbollah).



Mohammad, therefore the tribe considers their Muslim background as a permanent aspect of their tribal or ethnic ancestry.<sup>64</sup> Accordingly, there is no definite line between Islam and the Pashtuns and other groups with the same type of Islamic beliefs in Afghanistan. The Pashtuns very commonly follow a legal system and practice of Islam referred to as the “Way of the Pashtunwali,” or Pashtunwali codes<sup>65</sup> and the assembly (*loya jirga*). Pashtuns adhere to the aforementioned codes when they assemble to discuss these varying issues.

The Pashtuns and their codes have been in direct opposition with other Muslim laws for centuries, and these differences have created differing social orders in Afghanistan. The following examples provided in Figure 6 illustrate how the Pashtunwali codes and Sharia laws differ. The Pashtunwali codes aim to achieve a balance within the tribe and are defined by it.<sup>66</sup>

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<sup>64</sup> Jon Anderson, “How Afghans Define Themselves in Relation to Islam,” in *Revolutions and Rebellions in Afghanistan*, ed. M. Nazif Shahrani and Robert L. Canfield (Berkeley, CA: University of California Press, 1984), 274.

<sup>65</sup> Bobbie Kalman and Erinn Banting list the Pashtunwali codes as: *Melmastia*, visitors are welcomed warmly; *Nanawati*, shelter and refuge are provided to people running from the law; *Badal*, the right to feud with families who harm them or a family member; *Tureh*, bravery must be demonstrated; *Sabat*, loyalty is given to one’s family, friends, and tribal members; *Imandari*, righteousness is given to people that behave in a moral way; *Isteqamat*, persistence in everything that people do, from their studies to their beliefs; *Ghayrat*, people have the right to defend their property, their individual and family’s honor; and *Namus*, men must defend women against danger at all costs. Bobbie Kalman and Erinn Banting, *Afghanistan: The People* (New York: Crabtree Publishing Company, 2003), 14.

<sup>66</sup> Ibid.

behavior or activity	Pashtunwali Codes require	Sharia Law requires
adultery	hearsay is sufficient to be proven	requires four witnesses to be proven
women inheriting property	women cannot do this	women receive 50% of the male's portion
the males payment of the dowry	refusal of the husband to pay this is a major insult to the potential wife's family	as a sign of prestige, therefore frequently exceeds the limits set by the group
the acceptance of vengeance	is commended	attempts to limit the occasions in which it takes place

Figure 6. Examples of differences between the Pashtunwali Codes and the Sharia laws.

The Pashtuns will be heavily involved in the Resource Network Strategy from local to national levels. Pashtuns encircle several of the natural and mineral resource-rich areas in Afghanistan, and they're heavily involved in the country's politics at all levels. Thus far, many Pashtuns, including President Karzai, have accepted America's economic, social, and political support in many ways. When exposed to the benefits of local artisanal mining, it is likely that the Pashtuns will embrace USSOF's support of local mining initiatives. Furthermore, the Pashtunwali codes offer a foundation for settling local disputes, which can become a factor when mining natural and mineral resources. Through this strategy, mining in Afghanistan is likely to be viewed positively and supported by the Pashtuns.

#### 4. Textual Islam

In contrast to the Pashtuns, the *Shari'at* are Afghans who follow what are commonly referred to as Sharia laws. The *Shari'at* usually do not recognize differences

between tribal and ethnic groups and desire a more widespread Islamic social mandate. The *Shari'at* place themselves above specific groups, those in solidarity and those with social cohesion who are not followers of Sharia laws, imposing universal laws of the Muslim community bonded by religion.<sup>67</sup> The general framework of penal and common laws in the non-tribal zones continues to be Sharia laws and have yet to be replaced by another formal or informal system.<sup>68</sup>

If the Resource Network Strategy is advertised poorly or improperly, the followers of Textual Islam could view those implementing it with negative perceptions. For example, if this strategy is perceived as a “get rich quick” scheme, which it should not be, this type of Islamic following could consider this as an encroachment of capitalism and Western culture at the village level, and a threat to their beliefs. Accordingly, the mining of Afghanistan’s natural and mineral resources should be advertised as Afghans leveraging what Allah has provided in order to provide them with better lifestyles. Very realistically, USSOF will be supporting the Afghans as they experience these divine gifts. USSOF understand the importance of cultural and religious nuances such as this very well.

## 5. Sufism

Sufism is an inner (or esoteric) or mystical form of Islam.<sup>69</sup> Some consider this Sufi ideology as a reoccurring phenomenon that came before the birth of Islam, existing outside the Islamic scope, and having simply grown with Islam.<sup>70</sup> Sufism is primarily practiced in Afghanistan’s middle class societies that live in larger villages and the suburbs of more modern population centers such as Herat, Kabul, and the Kandahar region.<sup>71</sup> Sufi followers believe that there are two forms of revelation to God: the first is

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<sup>67</sup> Ibid.

<sup>68</sup> Ibid.

<sup>69</sup> Seyyed Hossein Nasar, “The Interior Life in Islam,” *Ahlul Bayt Digital Islamic Library Project*, 3, no. 2 and 3, accessed October 5, 2013, <http://www.al-islam.org/al-serat/vol-3-no-2-3/interior-life-islam-seyyed-hossein-nasr>.

<sup>70</sup> Alan Godlas, “Sufism—Sufis—Sufi Orders,” University of Georgia, accessed October 4, 2013, <http://islam.uga.edu/Sufism.html>.

<sup>71</sup> Roy, *Islam and Resistance in Afghanistan*, 38.

exoteric and second esoteric, and they focus on the later. Afghan Sufism is comprised of three orders: the Naqshabandiyya, Qadiriyya and Chestiyya, and many religious scholars (*ulama*) are involved with these orders.<sup>72</sup>

Sufis will very likely accept the Resource Network Strategy, and those implementing it. Sufis generally accept more modernized lifestyles, which is suggested by them living near areas that are more advanced with modern amenities. There is high potential that they'll appreciate the economic, social, and political growth that mining enables, and in some capacity, participate in it.

## **6. Reformist Fundamentalism**

Afghanistan's reformist fundamentalism movement has been active in the country's politics since the late 1960s,<sup>73</sup> and is plagued with several challenges. Numerous Afghan fundamentalist movements desire a return to what they consider a more valid, "righteous," and original form and practice of Islam. The significant problem is that few groups can agree as to what interpretation of Islam is most correct and appropriate to follow.

Fundamentalists have had limited influence in Afghanistan when compared to other Muslim ideologists. Their opinions of the personnel implementing this Resource Network Strategy will most likely be negative, but they may not matter, as they continue to be consumed with their own internal disputes regarding what version of Islam is appropriate to follow. In addition to Afghanistan, Muslim fundamentalists in other countries continue to be influenced by capitalism, westerners, and other ideologies. It is likely that Islamic fundamentalists, after witnessing the economic, social, and political benefits of mining, will be interested, support, or participate in mining.

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<sup>72</sup> Ibid., 39.

<sup>73</sup> Graham E. Fuller, *Islamic Fundamentalism in Afghanistan: Its Character and Prospects*, 1991, National Defense Institute, RAND, accessed September 24, 2013. <http://www.rand.org/content/dam/rand/pubs/reports/2007/R3970.pdf>.

## **7. Deobandism**

Sunni Muslims primarily practice Deobandism in Afghanistan. This type of Islamic practice was originally intended to bridge the gap between Sunni and Shia Muslims by promoting reasoning through the Koran and Sunna, and the strict teachings of the Hanafi fiqh or code of conduct that emphasizes the individual's role of reason.<sup>74</sup> Deobandism has a great deal of influence in Afghanistan today, along with other types of Islam with similar roots.<sup>75</sup>

Followers of Deobandism, many of which are members of the Taliban, may resist those implanting the Resource Network Strategy. Deobandis have often resisted external influence in Afghanistan, which is shown through its participation in the insurgency.<sup>76</sup> Although, much like the believers of other variations of Islam, followers of Deobandism, after experiencing or witnessing the economic, social, and political benefits that mining offers, will likely be in favor of those implementing this Resource Network Strategy. Their "individual role of reason" has a high likelihood for motivating them to support or participate in activities such as mining, that increase their economic, social, and political capital.

## **8. Wahhabism**

Wahhabism is distinguished by a total rejection of Sufism, opposition to Shias, and desire for a pure form of Islamic practices. More specifically, Wahhabists think that Islamic society should be organized completely on religious terms, and not by political groups.<sup>77</sup> Many Saudis, specifically Osama Bin Laden, who enabled money and

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<sup>74</sup> Muhammad Qasim Zaman, *The Ulama in Contemporary Islam* (Princeton, NJ: Princeton University Press, 2002), 11.

<sup>75</sup> Roy, *Islam and Resistance in Afghanistan*, 45.

<sup>76</sup> Bill Longley, "Deobandi Jamaat and Taliban," *Pakistan Defense*, April 29, 2009, accessed November 12, 2013, <http://defence.pk/threads/deobandi-jamaat-and-taliban.25879/>.

<sup>77</sup> Roy, *Islam and Resistance*, 72; Mills, *Karzai*, 45–75.

weapons to flow into Afghanistan, have enabled the spread of Wahhabi influence in Afghanistan. Today, during the post-9/11 era, Wahhabism continues to have influence in the country.<sup>78</sup>

Initially, Wahhabists will likely resist the Resource Network Strategy and those implementing it. It cannot be forgotten that Osama Bin Laden brought a lot of money and resources to Afghanistan in the late 1990s, and provided them to Wahhabists in trade for their support. The Wahhabists proved their own ability to be influenced by the economic, social, and political benefits provided by Bin Laden. Wahhabists have a high likelihood for eventually participating in, or at least supporting, mining activities in order to experience these same benefits. It will just take time to gain their support of mining.

Further indication that Wahhabists will eventually accept and participate in Afghan mining was provided in the Khas Kunar mining vignette described in Chapter I. Many Afghan miners that attending the USSOF-TFBSO transfer of mining equipment ceremony in January, 2012 (described in Chapter I), were from areas along the Afghan-Pakistan border where Wahhabism is heavily practiced, and many of them wanted USSOF to assist them with mining in their villages.

## **9. Shia and Sunni Groups**

Today's Afghan Shia and Sunni beliefs and differences play a role in Afghan society and, in many cases, have resulted in civil conflicts. These differences originate from the seventh century when Muslims were faced with determining the succession of Islam following the death of the Prophet Muhammad. 'Ali, cousin and son-in-law to the Prophet, was followed by Shia groups that supported him as the Prophet's rightful successor. After 'Ali's death, Shias considered his descendants as the rightful leaders of the Muslim community. Around the same time, Abu Baker also gained large Sunni Muslim followings who all opposed 'Ali's claims as being the rightful successor to the Prophet. 'Ali's Shia followings and Abu Baker's Sunni followings have disagreed on the rightful aspect of Muslim leadership since shortly after the Prophet's death. Shias believe that imams are unfailing and the vehicle through which God provides direction to the

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<sup>78</sup> Mills, *Karzai*.

people; Sunnis do not think that Muslim community leaders have divine power. Despite these Shia-Sunni differences and group separations, both groups have split into numerous sectarian groups (such as Wahhabis), and have developed their own religious and legal interpretations of Islam.<sup>79</sup>

Many of the aforementioned Islamic groups are comprised of either Sunnis or Shias, or both. Some members of these groups will support the Resource Network Strategy and those implementing it, others will immediately resist anything related to it, but eventually many from each group will witness or experience the benefits of mining. When these economic, social, and political benefits are available to Sunnis and Shias, it is likely that they will all, or at least most of them, will in some way support this strategy. What Shia groups would want to survive on the very minimum, when their Sunni neighbors are experiencing increased mining-related benefits, and vice versa? Likely none.

## **10. Pan-Islamism**

Pan-Islamism is a political movement that strives to achieve a unified Islamic state, or Caliphate. Followers of this type of Islam consider Muslim societies to be threatened by Western influence, and intend to unify and mobilize Muslims to resist it. More specifically, they believe Sharia laws to be extremely important and valid, do not accept the adoption of Western (mostly European) style courts and laws, and promote an Islamic resurgence to enforce their own laws.<sup>80</sup> Despite the ideologies of Pan-Islamism, its followers have not established a strong foundation in Afghanistan, but in some instances, are represented in groups discussed herein.

Pan-Islamists will likely, but only initially, not support the Resource Network Strategy, and those implementing it, mostly because non-Afghans will be involved. Although, much like the other Muslim groups, the economic, social, and political benefits related to mining will override negativity toward this strategy and the people involved.

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<sup>79</sup> S. B. "What is the Difference between Sunni and Shia Muslims?" *The Economist* (blog), May 28, 2013, <http://www.economist.com/blogs/economist-explains/2013/05/economist-explains-19>.

<sup>80</sup> Walid Mahmoud Adbelnasser, *The Islamic Movement in Egypt* (London: Kegan Paul International, 1994), 30.

Afghanistan's numerous ethnicities and tribes, and variations of Islam, are relevant to this Resources Network Strategy. The country's people and Islamic ideologies must be understood, acknowledged, and respected as this strategy is moved forward. Many non-Muslims have known about Islam for a long time. Far fewer have effectively acknowledged the religion. And only a relative few have respected Islam throughout Afghanistan's history.

This Resource Network Strategy is designed to embrace understanding and respect for all Afghans while simultaneously providing them with the progressive and common purpose of mining. This purpose enables economic, social and political growth throughout the entire country. This strategy recommends that USSOF shift their VSO methodology and influence towards Afghanistan's natural and mineral resource-rich terrain in order to enable local Afghan mining. This highly valued terrain is relatively evenly distributed throughout most portions of Afghanistan and has the potential to benefit numerous tribes, ethnicities, and Islamic believers, no matter their beliefs and ideologies.

Afghans have always resisted being controlled by a central power because they've rarely, if ever, benefitted from one. The benefits that various Afghan religious, social and political groups desire are themselves diverse. Afghans require a reason, desire and overall benefit to actively pursue their own development and advancement, which cannot be forced upon them as many have tried to do in the past. Surely, any leader that attempts to centrally control Afghanistan will have allegiances to some form of Islam, tribe, ethnicity, or special interest, either actively or passively, and opposing groups will likely experience no benefits, increasing costs, and then resist. The various Afghan ethnicities, tribes, and believers—Muslims, require a way forward that enables them to make decisions for themselves while benefiting, one area at a time.

The Resource Network Strategy is founded upon a very basic USSOF-led approach, which includes enabling Afghan mining in order to benefit each of their highly diverse groups. This would start with those living throughout the country's periphery and moving inward as opposed from Kabul and outward. It would ensure the benefits of



many more Afghans exceed the costs they've experienced for many years. This approach has the potential to achieve positive and lasting effects for many Afghans.

Islam is the most common aspect of Afghanistan, but not all Afghans are “hard core” followers of the religion. Some Afghans do not faithfully acknowledge Islam at all. A similar reality was shown by British colonialists behavior while abroad. Many, but not all were Christians. Secular desires have quickly taken the place of religious ones for both Afghans and colonialists. The concepts of “true believers” in any religion are often times less real than perceived, because they are comprised by human tendencies.

This Resource Network Strategy addresses the human aspects of all Afghans by enabling them to benefit economically, socially, and politically through mining. To enable these Afghan benefits, USSOF-led elements will utilize their various networks to influence and increase local knowledge, resources, capabilities, and motivations required to conduct mining.

## **C. GEOGRAPHY**

Afghanistan is a landlocked central Asian country bordered by Iran to the West; Turkmenistan, Uzbekistan and Tajikistan to the North; China to the Northeast; and Pakistan to the East and South. It is roughly the same size as the U.S. state of Texas.<sup>81</sup> The country is divided into 34 provinces (Daykundi and Panjsher were added in 2005) and 398 districts. Afghanistan's provinces and districts often are referred to as administrative areas.

Afghanistan is located on the “silk road” that connected the trade routes between China, Europe and India, and the resultant foreign interest in Afghanistan has heavily influenced the country's geopolitics. Foreign powers such as Britain, Russia, and the United States have all heavily influenced the delineation of modern Afghanistan's borders at the national, provincial and district levels.<sup>82</sup> Most (particularly rural) residents

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<sup>81</sup> “Afghanistan's Comparison to Texas,” July 30, 2013, <http://mapfight.appspot.com>.

<sup>82</sup> Cynthia Smith, “A Selection of Historical Maps of Afghanistan” (Library of Congress, Geography and Map Division: August, 2004), accessed October 5, 2013, <http://www.loc.gov/rr/geogmap/pub/afghanistan.html>.

of Afghanistan and neighboring countries pay little attention to these administrative borders because they've had very little input regarding where, when, and why these borders were established. As a result, Afghanistan's borders are extremely porous (see Figure 7 for an illustration of these borders).

Afghanistan's capital, Kabul, is by far the largest city in the country with an estimated population (est. pop.) of 3,290,000. Other key population centers include: Kandahar (est. pop. 490,000), Herat (est. pop. 435,000), Mazar-i-Shari (est. pop. 368,000), Kunduz (est. pop. 305,000), Taloqan (est. pop. 209,000), Jalalabad (est. pop. 207,000), and Puli Kumri (est. pop. 204,000).<sup>83</sup>

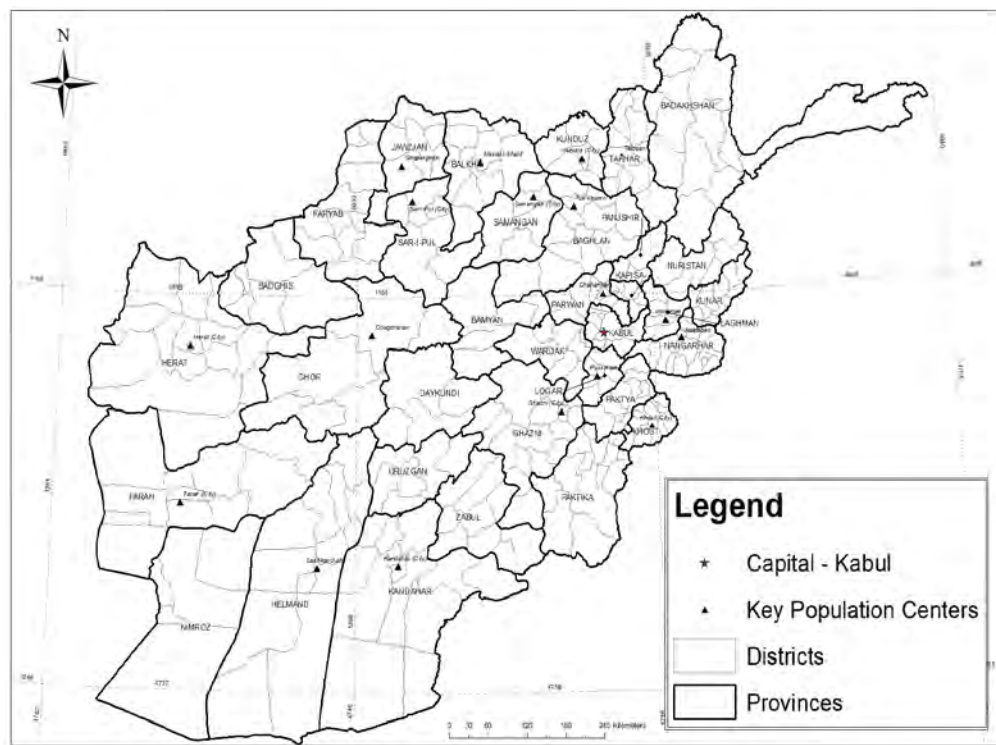


Figure 7. Afghanistan's Administrative Boundaries, Key Population Centers and Capital.

Afghanistan's terrain and climate is extremely diverse. The country is composed of several plains in its northern, western and southwestern regions, with varying degrees

<sup>83</sup> Central Statistics Office, “Table 2-2: Settled Population (of Afghanistan) by Province-2010-2011,” 2010–2011, accessed October 5, 2013, [www.cso.gov](http://www.cso.gov).

of rugged mountainous terrain in its central, northeastern and eastern portions. More specifically, some of the country's regions offer barren and high temperature deserts; freezing cold and snowcapped mountain peaks; wet and highly fertile river valleys; and rolling hills of both sparse and lush vegetation.

The Hindu Kush Mountains are the country's tallest (>4,000 m above sea level—ASL) and most unforgiving terrain, and they blanket two thirds of the country. Other significant terrain features include the Chagai Hills of southern Helmand Province; Registan Desert in the country's southern regions; and the Argandab, Dori, Harut, Helmand, Khash and Tarnak Rivers that generally run from the southwest to northeast. Figure 8 illustrates the aforementioned information.

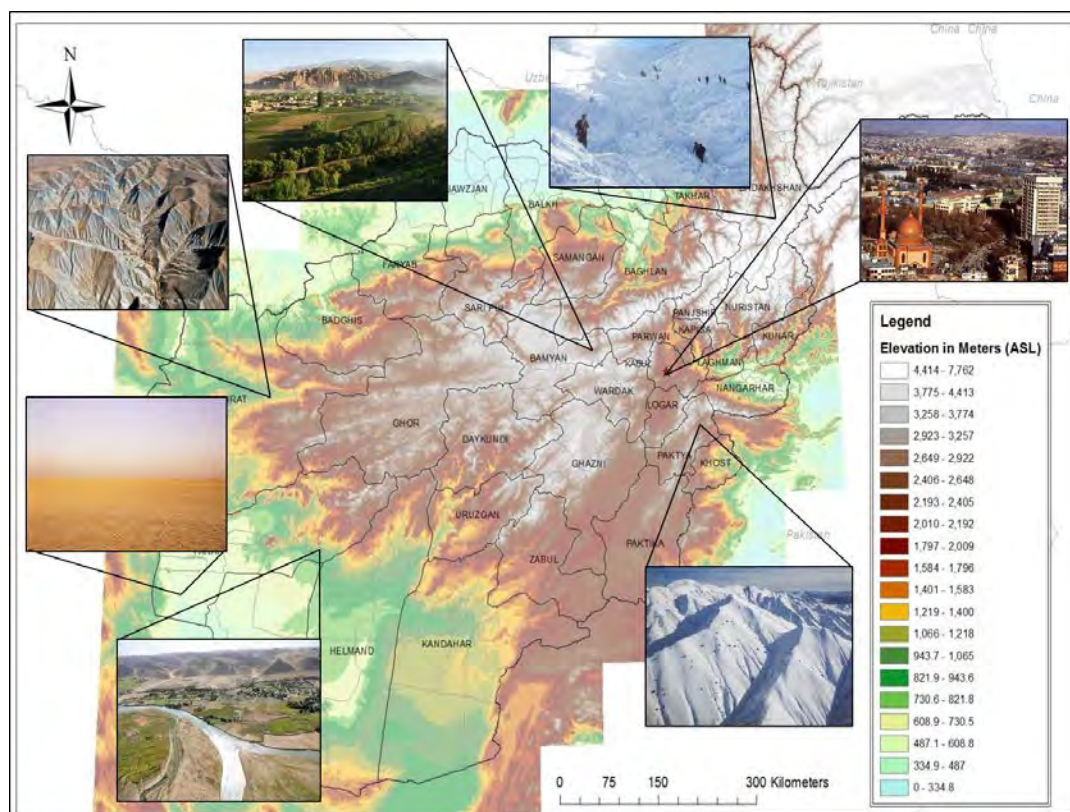


Figure 8. Afghanistan's terrain from sea level to >4,000 meters ASL.<sup>84</sup>

In the context of the Resources Network Strategy, Afghanistan's population and physical terrain are extremely relevant. USSOF-enabled mining at the village level will eventually require the natural and mineral resources that are extracted to be transported to

<sup>84</sup> Stephen Peters et al., eds., *Summaries of Important Area for Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, vol. I, Open-File Report 2011-1204 (Afghanistan Project No. 199) (U.S. Geological Survey, 2011), CD ROM. The pictures embedded in this map are of: Afghans walking up a snow covered mountain draw (top-middle-right), from Wadsam, "Damages Caused by the Recent Snow in Northern Afghanistan," *Afghan Business News Portal*, March 10, 2013, accessed October 7, 2013, <http://www.wadsam.com/damages-caused-by-the-recent-snow-in-northern-afghanistan-232/>; Kabul (top right), from the Embassy of Afghanistan (Washington, DC), "Afghanistan in Brief," accessed October 7, 2013, <http://www.embassyofafghanistan.org/page/afghanistan-in-brief>; Afghanistan's snow covered mountains (bottom right) in Paktia Province, from "Geography of Afghanistan," *Wikipedia*, accessed October 7, 2013, [http://en.wikipedia.org/wiki/Geography\\_of\\_Afghanistan](http://en.wikipedia.org/wiki/Geography_of_Afghanistan); a fork in the Helmand River (bottom left), available from Wadsam, *Afghan Business News Portal*, accessed October 7, 2013, <http://www.wadsam.com>; Afghanistan's western desert (middle-left) from "Afghanistan," College Prep, accessed October 8, 2013, <http://faculty.college-prep.org/~bernie/sciproject/project/Afghanistan/Resources6/Index.html>; the barren Afghan mountains (left-top); and lush green valley (top-middle-left) from "Steven Green Photography," accessed October 8, 2013, <http://www.stevengreenphotography.com>.

another location in Afghanistan for further processing, trade, and investment. Additionally, more equipment will be required to be transported to areas where mining occurs.

Afghans have been traversing the country's challenging terrain for centuries, and many of them are experts at navigating it. In some instances where terrain is challenging, USSOF will be required to acquire local Afghan knowledge of terrain and transport methods to transfer the natural and mineral resources that are mined. In other places where terrain is too challenging to maneuver large equipment carrying mineral ore and other mining equipment, USSOF may be required to enable or assist in the transfer of mining-related products from one location to another by aircraft or vehicles not readily available to the Afghans.

This strategy will require members of the Afghan government, USSOF, USAID, DoS and other civilian organizations to interact with foreign investors, financial institutions, and other countries while trading Afghanistan's natural and mineral resources. Accordingly, the Afghan government will be provided with an excellent opportunity to increase its political legitimacy and economic standing, and a more official interdependence will be established between the Afghans and their neighboring and other foreign partners.

The transport of Afghanistan's natural and mineral resources has potential to create a whole new industry in itself. Movement of these resources will require many different types of transportation such as trucks, aircraft, mules, and horses, and all the resources required to make them move (fuel, oil, tires, food, saddles, etc.).

USSOF will promote and reinforce the Afghans using their own indigenous methods of transport in order to develop and grow industries that support mining. USSOF understand the importance of indigenous forces and populations completing tasks on their own in order to promote long-term skills and capacities. This Resource Network Strategy enables mining and its related tasks, and is not designed for USSOF to complete them.

## **D. ECONOMIC AND SOCIAL DEVELOPMENT**

Afghanistan ranks as one of the poorest, least developed, and most corrupt<sup>85</sup> countries in the world. Although the country's economy has made improvements since the fall of the Taliban in 2001, most of this is credited to the billions of dollars it has received in international aid. These improvements are seen by growth in their service and agricultural sectors.<sup>86</sup> Afghanistan's gross domestic product (GDP) was estimated at \$19.91 billion (official exchange rate) in 2012, ranking the country 109th in the world; and its GDP per capita was estimated at \$1,100 in 2012, ranking the country 216th in the world.<sup>87</sup>

### **1. Industries and Labor Force**

Afghanistan's primary industries include the small-scale production of bricks, textiles, soap, furniture, shoes, fertilizer, apparel, food products, non-alcoholic beverages, mineral water, cement, natural gas, coal, and copper. In 2011, the United Nations estimated 15.7 percent of the adult female and 80.3 percent of the adult male populations as participating in the Afghan labor force.<sup>88</sup>

### **2. Exports, Imports and Trade Partners**

Afghanistan's exports are mostly produced from small-scale businesses, as very few larger-scale corporations and companies exist there. In 2012, the country's exports were valued at \$376 million, and were mostly comprised of opium, fruits and nuts, hand-woven carpets, wool, cotton, hides and pelts, precious and semi-precious gems.<sup>89</sup> The Afghans trade 33.1 percent of their exports with Pakistan, 24.9 percent with India, 8.7 percent with Tajikistan, and 5.8 percent with the United States.<sup>90</sup>

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<sup>85</sup> Hy Rothstein and John Arquilla, eds., *Afghan Endgames: Strategy and Policy Choices for America's Longest War* (Washington DC: Georgetown University Press, 2012), 177–178.

<sup>86</sup> CIA, "Afghanistan," 2013.

<sup>87</sup> Ibid., 2012.

<sup>88</sup> United Nations Data, "Afghanistan," accessed on September 27, 2013, <http://data.un.org/CountryProfile.aspx>.

<sup>89</sup> CIA, "Afghanistan," 2012 and 2013.

<sup>90</sup> Ibid., 2012.

Afghans rely heavily upon imports, although they receive them in relatively small amounts. The country's imports, valued at \$6.39 billion in 2012 (117th in the world), were mostly machinery and other capital goods such as food, textiles, and petroleum products.<sup>91</sup> Afghanistan receives 25.8 percent of its imports from Pakistan, 17.4 percent from the United States, 8.4 percent from Russia, 5.5 percent from India, 5.4 percent from China, 4.5 percent from Kazakhstan, and 4.3 percent from Germany.<sup>92</sup> Undoubtedly, the Afghans are taking much more than they're producing.

### **3. The Afghan Poppy Harvest**

The Afghan poppy harvests greatly influence the country's economy. A May, 2013 report published by the United Nations Office on Drugs and Crime and the Islamic Republic of Afghanistan offered the following data: the Afghans were the world's largest producers of opium from 2004 through 2012;<sup>93</sup> in 2012, the total area of poppy cultivation was estimated at 154,000 hectares (380,542 acres), an 18 percent increase from 2011. The country's 2012 net opium exports equaled 10 percent of the country's legal GDP, while the farm-gate value (value of opium leaving cultivation areas for eventual export) was estimated at four percent of the legal GDP. The majority (95 percent) of opium production occurred in nine provinces located in Afghanistan's Southern and Western regions; the gross export value of (illicit) opium and heroin/morphine exports in 2012 was modestly estimated at \$2 billion while the net export value of opiates was \$1.94 billion. Cannabis is closely related to poppy cultivation; 71 percent of poppy-growing villages reported cannabis cultivation in 2012.<sup>94</sup>

Why is Afghanistan's economy relevant to the Resource Network Strategy? This strategy aims to better the country's economy through mining and the numerous other

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<sup>91</sup> Ibid., 2012 and 2013.

<sup>92</sup> Ibid., 2012.

<sup>93</sup> United Nations Office on Drugs and Crime, Islamic Republic of Afghanistan Ministry of Counter Narcotics, "Afghanistan Opium Survey 2012" (May, 2013), 21, accessed September 29, 2013, [http://www.unodc.org/documents/crop-monitoring/Afghanistan/Afghanistan\\_OS\\_2012\\_FINAL\\_web.pdf](http://www.unodc.org/documents/crop-monitoring/Afghanistan/Afghanistan_OS_2012_FINAL_web.pdf).

<sup>94</sup> United Nations Office on Drugs and Crime, "Afghanistan Opium Survey 2012," 11–12.

industries that support it. The country's natural and mineral resources have the potential to positively affect Afghanistan's economy beyond any of its other resources.

How does the Resource Network Strategy address Afghanistan's economy? This strategy employs Afghan locals for mining and its related activities; provides them with financial resources (microloans, grants, banking, etc.) to enable mining; and facilitates direct payments from investors to the Afghans for natural and mineral resources that are mined. This type of financial-based system will be enabled by USSOF, USAID, and DoS who will work to ensure their incentives are provided directly to Afghan miners.

This strategy creates economic interdependence and moves resources between Afghanistan's tribes and communities; foreign investors, other countries and financial institutions. This interdependence will be established through the Afghans' increased desires to benefit from trading their natural and mineral resources, purchase mining equipment, access and develop more advanced mining-related knowledge, and increase their support systems related to mining.

## **E. AFGHAN EDUCATION**

In 2002, the Afghan central government, with support from UNESCO (and the Independent High Commission of Education), proposed to revitalize policies, objectives and strategies for education. Afghanistan's Ministry of Education, support by UNESCO and other International organizations, developed strategic plans for the improvement of primary, secondary, vocational, and higher education. Significant attention was given to teacher training and higher education. The Afghan Constitution, adopted in 2004, required nine years of basic education for all boys and girls between ages six and 15. Additionally, the Afghan central government sought to expand secondary, technical,



vocational, and other higher education; establish free enrollment in state sponsored schools up to the university level; and allow and regulate private general, technical, vocational and higher education.<sup>95</sup>

The results of Afghanistan's educational initiatives between 2002 and 2012 have resulted in enrollment in general education increasing from 2.3 to 8.6 million, 3.2 million (38 percent) of which were females; and enrollment in higher education increasing from 31,200 to 101,000 students, 19,200 (19 percent) of which were female students. In spite of the expansion of education in Afghanistan, in 2012 only 58 percent of school age children (70 percent boys and 45 percent girls) participated in basic education. Most of this low attendance is due to security, financial, and educational service constraints.<sup>96</sup>

After 9/11, education in Afghanistan undoubtedly changed. All levels and type of education expanded; male and females were given increased access to numerous types of education; and more Afghans have received formal education. As Afghan education has made quantifiable improvements, the quality and efficiency of education continues to struggle in areas such as the quality and amount of available teachers and faculty, lack of adequate physical and learning facilities such as libraries and laboratories, and outdated and unsuitable curricula, especially for vocational and higher educations. The country lacks a comprehensive strategy for science and technology education, and vocational training. Furthermore, the literacy rate, 28.1 percent, remains low for Afghans 15 years of age and over;<sup>97</sup> and it is unlikely that mandatory education for seven- through 12-year-olds will be achieved before 2020.<sup>98</sup>

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<sup>95</sup> Saif R. Samady (Former Chairman of Independent High Commission of Education for Afghanistan), "Changing Profile of Education in Afghanistan," peDOCS: Open Access Erziehungswissenschaften, Deutsches Institut für Internationale Pädagogische Forschung (DIPF), 15S (2013), 2, accessed September 27, 2013, [http://www.pedocs.de/volltexte/2013/7798/pdf/Samady\\_2013\\_Education\\_Afghanistan.pdf](http://www.pedocs.de/volltexte/2013/7798/pdf/Samady_2013_Education_Afghanistan.pdf).

<sup>96</sup> Ibid.

<sup>97</sup> CIA, "Afghanistan," 2013.

<sup>98</sup> Samady, "Changing Profile of Education in Afghanistan," 10.

Why is education in Afghanistan relevant to the Resource Network Strategy? This strategy provides Afghans with several reasons or benefits for receiving education, and creates and supports education opportunities that far exceed any they've had in recent history.

How does this strategy promote education at the village level? The Resource Network Strategy promotes learning by: involving members of the Afghan Geological Survey, USGS, USAID, DoS, and USSOF; establishes internet cafés; and increases cellular networks and the number “smart” (cell) phones at the village level. This will provide access to information that is required in order to conduct efficient and effective mining and its related skills.

Once Afghans are exposed to the benefits of increased mining-related knowledge, it is likely that villages and communities will increase their desire to educate themselves about mining, and will send their people to receive education at Afghanistan's universities. There is a high likelihood that Afghans will rely on “outsiders” mining-related knowledge for only limited periods of time.

## **F. AFGHAN HEALTH AND HEALTH CARE SYSTEMS**

Afghanistan's health care system is among the weakest in the world. Afghans struggle to obtain the basic necessities such as food, shelter, and clothing. Exposure to pneumonia, bacterial diarrhea, birth asphyxia, neonatal sepsis, hepatitis A, typhoid fever, malaria, the highly pathogenic H5N1 avian influenza, and other illnesses, diseases and injuries intensify the already poor health system.<sup>99</sup> While foreign health care workers have increased since 9/11, there is a critical shortage of Afghan health care workers at every level. Healthcare facilities are few and far between, and the ones that do exist are in need of restoration. Furthermore, medicines, vaccines, and medical related equipment and materials are in short supply.

Afghanistan's Ministry of Public Health (MoPH) has a mission to “improve the health and nutritional status of the people of Afghanistan in an equitable and sustainable

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<sup>99</sup> CIA, “Afghanistan,” 2013.

manner through quality health services provision, advocating for the development of healthy environments and living conditions; and the promotion of healthy lifestyles.”<sup>100</sup> The MoPH has established numerous objectives to accomplish its mission. Additionally, many “international and national nongovernmental organizations (NGOs) have assumed responsibility for the provisions of essential primary health-care services via direct contracts with donor agencies,” securing millions of dollars to support the Afghan healthcare system.<sup>101</sup> While the MoPH, and international and national NGOs have all committed a great deal of time, monetary aid, and planning for better healthcare services, much more financial and human capital will be required to increase the health status of Afghans.

Why do Afghan health and health care systems matter in the context of this strategy? This Resource Network Strategy promotes mining and its related activities. Accordingly, Afghans will require increased medical skills, knowledge, and support at the village level because they’ll likely experience injuries and illnesses related to mining.

How does this strategy intend to address Afghan health and health care systems? USSOF VSO teams have medics that are highly prepared to treat Afghan locals, and to train them to treat themselves for injuries and illnesses. USSOF medics have been treating Afghan locals and training them to provide medical care in numerous villages for over a decade, and will continue to do so. These types of activities by USSOF at the village level are major “rapport builders” among indigenous populations.

Afghans at local and national levels understand that mining is dangerous, and that the likelihood of injuries and illnesses will increase when mining increases. As Afghans start to experience benefits from mining, they’ll very likely increase their efforts to

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<sup>100</sup> Ministry of Public Health, Islamic Republic of Afghanistan, “Vision for Health 2011–2015,” accessed September 28, 2013, <http://moph.gov.af/en/page/584>.

<sup>101</sup> B. Sabri et al., “Towards Sustainable Delivery of Health Services in Afghanistan: Options for the Future,” *Bulletin of the World Health Organization*, 85, no. 9 (September 2007), World Health Organization, accessed September 27, 2013, <http://www.who.int/bulletin/volumes/85/9/06-036939/en/index.html>.

educate themselves to treat injuries and illnesses. Afghans will seek medical-related educations and skills at Afghanistan's vocational schools, colleges, and universities in order to support a mining industry.

This strategy promotes the Afghan government's support of mining at the village level. It is very likely that when the Afghan government starts to experience economic, social, and political benefits from mining, it will increase its efforts to provide nurses, doctors, and medical services and supplies to mining communities. Support such as this at the local levels by the Afghan government will increase its legitimacy in the eyes of many local populations, and in turn, increase its revenue through increased mining.

## **G. AFGHAN CORRUPTION**

Corruption<sup>102</sup> is a significant and well-known aspect of Afghanistan.<sup>103</sup> The result of 6,700 Afghan surveys conducted in 2009 and 2011/2012 by the United Nations Office on Drugs and Crimes (UNODC) and the Islamic Republic of Afghanistan High Office of Oversight and Anti-Corruption determined corruption to be the largest issue of importance for their country, ahead of insecurity, unemployment, poverty/low standard of living, external influence, and government performance.<sup>104</sup>

The large-scale population survey and four sector-specific (police, local government, judiciary and education) integrity surveys of public officials conducted by the UNODC and Afghan government in 2011/2012 revealed that the delivery of public services "remains severely affected by bribery in Afghanistan and that bribery has a major impact on the country's economy." In 2012, half of Afghans surveyed paid bribes during requests for public services and the cost of bribes paid to government officials was

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<sup>102</sup> The United Nations Office on Drugs and Crime (UNODC) and Islamic Republic of Afghanistan High Office of Oversight and Anti-Corruption Corruption summarize corruption as "the improper use of a public or official position for private gain." United Nations Office on Drugs and Crime [UNODC], "Corruption in Afghanistan: Recent Patterns and Trends," December, 2012, accessed on September 27, 2013, [http://www.unodc.org/documents/data-and-analysis/statistics/corruption/Corruption//\\_in\\_Afghanistan\\_2013.pdf](http://www.unodc.org/documents/data-and-analysis/statistics/corruption/Corruption//_in_Afghanistan_2013.pdf), 3.

<sup>103</sup> Rothstein and Arquilla, *Afghan Endgames*, 177–178.

<sup>104</sup> UNODC, "Corruption in Afghanistan."

estimated at \$3.9 billion. This data collected in 2012 demonstrates a 40 percent increase between 2009 and 2012, as the ratio of bribery costs to GDP remained relatively consistent: 23 percent in 2009 and 20 percent in 2012.<sup>105</sup>

Bribery undoubtedly affects the public sector, but also private entities in Afghanistan. Almost 30 percent of Afghan citizens paid bribes when requesting services from individuals in the private sector in 2012, as opposed to 50 percent who paid bribes to public officials (or government employees). The impact of bribery with non-public (or private entities) is lower, with an estimated total cost being \$600 million per year, which is 15 percent of the estimated \$3.9 billion paid to the public sector.<sup>106</sup>

In 2011/2012, one out of every five (20 percent) Afghan citizens refused to pay a bribe, which was primarily due to their lack of financial resources. The use of bribery in the public sector affects the ability of Afghan populations to access necessary services. People with higher incomes have better access to, and receive higher quality public services. Conversely, Afghans surveyed with lower incomes were more likely to deny requests for bribes, making them less likely to utilize public services.<sup>107</sup>

Public sector employment is largely based-on bribes or patronage. Eighty percent (80 percent) of Afghans surveyed with family members employed in civil services between 2010 and 2012 declared that these family members received some form of assistance or paid a bribe to be recruited. Civil servants surveyed in the police, local government, judiciary and education sectors acknowledged that (mostly monetary) assistance with recruitment was very common. For example, 50 percent of police, local government staff and school teachers suggested that they'd received assistance in attaining their positions.<sup>108</sup>

Twenty-two percent of people surveyed that paid a bribe in 2012 reported the incident to authorities (police—33 percent and the public prosecutor's office and the

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<sup>105</sup> Ibid., 5–6.

<sup>106</sup> Ibid.

<sup>107</sup> Ibid.

<sup>108</sup> Ibid.

High Office of Oversight and Anti-Corruption—20 percent). Bribery reporting in Afghanistan seemed to be high, but it is not clear if reporting described in the survey took place in a formal setting since it seldom led to effective intervention. Less than 20 percent of cases reported to authorities resulted in formal legal procedures and most claims did not result in any type of follow up.<sup>109</sup>

In addition to the UNODC and Afghan government, several other organizations, such as Transparency International, the World Bank and Asia Foundation, the Center for International Private Enterprise (CIPE), Integrity Watch Afghanistan (IWA), and Transparency International, have studied corruption in Afghanistan.<sup>110</sup> All of them have indicated high levels of corruption in Afghanistan. The effects of corruption were echoed in a January, 2009 statement by President Hamid Karzai, when he told *BBC News* that corruption affects the Afghan government and international organizations, aid agencies and private firms involved in reconstruction and development in Afghanistan.<sup>111</sup>

During President Karzai's administration (2004 to the present), several Afghan anti-corruption groups have formed, and they have had various focuses. Several organizations represent the Afghan government's efforts to fight corruption in the country. The High Office of Oversight and Anti-corruption (est. 2008) reports directly to Karzai, and coordinates and monitors the implementation of preventive measures, including the anti-corruption strategy, to help limit government corruption.

The Control and Audit Office (est. 1981) reports directly to Karzai, and audits financial matters of the Afghan government. The Anti-Corruption Unity (est. 2009) reports to the Afghan Attorney General, and prosecutes corruption cases. The Major Crimes Task Force (est. 2009) reports to the Deputy Minister of Security and Director of the Security General, and investigates high-level corruption cases. The Criminal Justice Task Force (est. 2005) reports to the Counternarcotics Police of Afghanistan, Prosecutors

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<sup>109</sup> Ibid.

<sup>110</sup> Civil-Military Fusion Centre [CFC], "Corruption & Anti-Corruption Issues in Afghanistan," February, 2012, accessed on September 27, 2013, [www.cimicweb.org](http://www.cimicweb.org).

<sup>111</sup> Ibid., 4.

and Central Narcotics Tribunal (Supreme Court), and investigates and prosecutes drug-related crimes and corruption.<sup>112</sup> The mission of these organizations is clear, but, corruption continues to be a major problem in the country.

Why is Afghan corruption relevant in the context of the Resource Network Strategy? The personnel implementing this strategy will be surrounded by corruption on a daily basis, and must be willing to accept some degrees of it. How does the Resource Network Strategy address corruption? An overarching theme that exists throughout Afghanistan's corrupt practices is the competition for services and resources between urban and rural Afghans. The Resource Network Strategy is designed to enable economic, social, and political capital, growth, and leverage at the Afghan village level through mining. The more efforts Afghans invest in USSOF-enabled mining, the more financial resources, social services, and legitimacy local leaders and communities will have.

This strategy is designed to reinforce the Afghan government's support of village level mining. The government's support of mining conducted by Afghan locals provides it with significant opportunities for its increased legitimacy, which could make corruption less of a concern in the minds of many Afghans. Furthermore, this strategy requires Afghan leaders to reach out to the international mining community to increase its mining capacity and investors to trade its natural and mineral resources. The Afghan government's ability to deliver natural and mineral resources to foreign investors, while simultaneously ensuring Afghan mining communities are supported and receive payments for their efforts and resources, provides it with an excellent opportunity for increasing its legitimacy from multiple perspectives.

Afghanistan's people, beliefs, terrain, and economic and social situations are unique and diverse. Understanding these issues is often frustrating. Those who implement this Resource Network Strategy will be surrounded by all of these aspects of Afghan culture, society, and terrain. This strategy has the potential to positively influence many, if not all, of the aforementioned aspects of Afghanistan. This strategy is

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<sup>112</sup> Ibid., 44.

designed to increase economic, social, and political capital, with mining being the primary impetus, for many Afghan communities, starting from the country's periphery and moving inwards. The natural and mineral resources have the potential to exceed the economic effects and benefits of legal and illegal drug production and trade. This strategy aims to provide mining-related knowledge, skills, and educations directly to the Afghans at the village level through locally embedded experts, access to the internet and cell phone networks that can all provide immediate mining-related information and feedback. Additionally, the benefits that result from village level mining initiatives will increase motivation of Afghans to seek mining-related skills and educations at one of Afghanistan's universities. Afghanistan's government will be required to reach out to foreign investors and the International mining community to increase its mining knowledge and support, and trade its resources. The government is considered corrupt from numerous perspectives, and its ability interact with foreign investors and mining companies provides it with an excellent opportunity for increased legitimacy. A fortune in natural and mineral resources exists in the extremely diverse and challenging country of Afghanistan, and this strategy is designed to exploit them through mining in order to promote a common purpose for all of it people.



### **III. AREAS OF INTEREST: SECURITY CONDITIONS IN AFGHAN REGIONS WITH SIGNIFICANT RESOURCE ENDOWMENTS**

Because of its location at the meeting point of the Indian and Eurasian tectonic plates, Afghanistan has an abundance of natural resources. This has been known for millennia. Stones that form Egypt's Great Pyramids have been shown to originate from Afghanistan and date back to around 2630 BC.<sup>113</sup> There is evidence that Buddhists who settled in what are now Afghan lands nearly two millennia ago actively mined the country's copper,<sup>114</sup> and that Alexander the Great's armies conducted mining operations in the country during the fourth century BC.<sup>115</sup> Scholars have also found references to Afghanistan's rubies in old Arabic writings from the tenth through fourteenth centuries,<sup>116</sup> and in the accounts of famous travelers such as Marco Polo (1254–1324) and Ibn Battuta (1325–1354).<sup>117</sup>

In more modern times, Britain and Russia were active in mapping and assessing Afghanistan's natural and mineral resources during the 19th and 20th centuries.<sup>118</sup> As previously mentioned, the United States took over this effort in the 21st century, leading to the landmark 2011 USGS report that identified over \$1 trillion in a wide variety of natural and mineral resources available for exploitation in Afghanistan. The 2011 USGS report delineated 24 "areas of interest" (AOIs) where most of Afghanistan's natural and mineral resources are concentrated. It is these AOIs that are the focus of this strategy.

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<sup>113</sup> Peter Moorey, *Ancient Mesopotamian Materials and Industries: The Archeological Evidence* (Winona Lake, IN: Oxford University Press, 2010), 86–87.

<sup>114</sup> Aunohita Mojumdar, "Afghanistan: Remembering the Taliban in Ancient Buddhist Copper Mines," September 9, 2011, EURASIANET, accessed November 8, 2012, <http://www.eurasianet.org/node/64152>.

<sup>115</sup> Ibid.

<sup>116</sup> Richard Hughes, "The Great Enigma: Afghanistan's Ruby/Spinel Mines," accessed November 7, 2013, <http://www.ruby-sapphire.com/afghanistan-ruby-spinel.htm>.

<sup>117</sup> Ibid.

<sup>118</sup> Mountstuart Elphinstone, *An Account of the Kingdom of Caubul* (Karachi: Oxford University Press, 1972); Vladimir Obruchev, *Field Geology* (Moscow: Academy of Sciences, 1927).

In this chapter, I will evaluate the attractiveness of all 24 AOIs. In addition to discussing their mineral endowments, I will also address logistics and security conditions in each AOI. Clearly, AOIs with considerable physical potential for small-scale mining are more attractive near term candidates for implementation of the Resource Network Strategy. The existence of good transportation links also renders an AOI more attractive. The long term objective of the Resource Network Strategy is of course to be able to secure areas that are currently infested with insurgents. It is my belief, however, that the best places to focus on implementation in the initial phase of the program are in AOIs that are relatively secure.

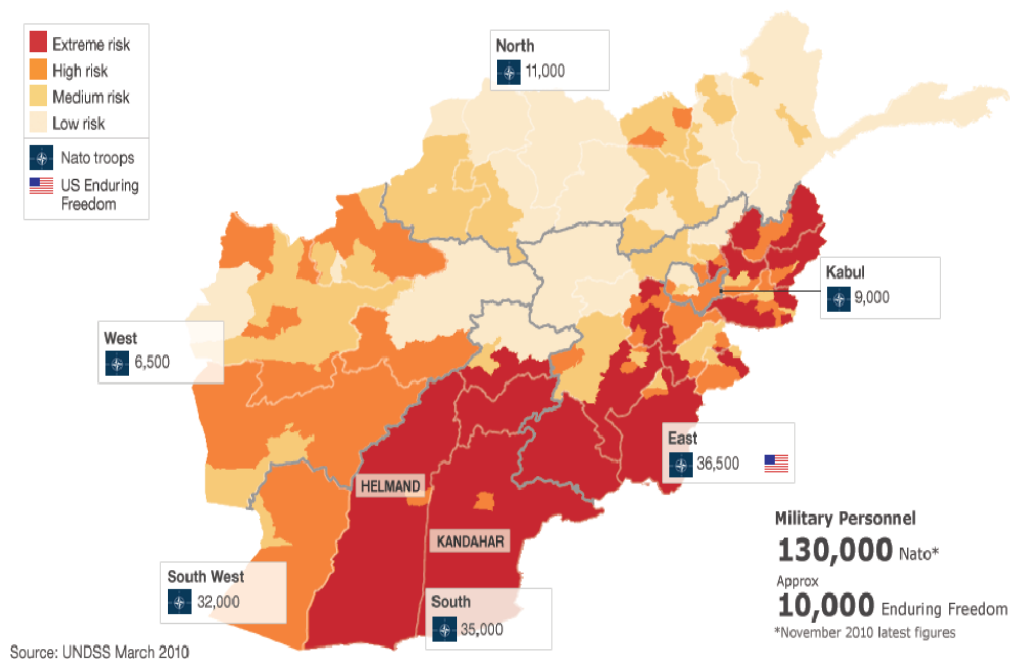


Figure 9. An assessment of Afghanistan's security situation by the United Nations. Department of Security Services in March, 2010.<sup>119</sup>

In evaluating security conditions in each AOI, I will primarily exploit the United Nations Department of Security Services (UNDSS) assessment and map published in 2010.<sup>120</sup> The UNDSS assigned extreme, high, medium, and low-level security risk

<sup>119</sup> "Afghan Troop Map: US and NATO Deployments," *BBC News, South Asia*, last modified November 19, 2010, <http://www.bbc.co.uk/news/world-south-asia-11795066>.

<sup>120</sup> Ibid.

assessments to all areas of Afghanistan (see Figure 9). This will be supplemented by interviews with USSOF personnel familiar with the different AOIs, as well as data on VSO and ALP deployments in each area.<sup>121</sup>

What follows is an overview of each AOI.<sup>122</sup> Following that, an appendix will provide a description of the economic uses of each mineral discussed in the overview.

## **1. Aynak**

The Aynak AOI is a 3,439 km<sup>2</sup> area in southern Kabul, northern Logar and eastern Wardak Provinces. It contains world-class copper, cobalt, chromite, talc-magnesite, and asbestos deposits. Four sub-areas within the AOI contain prospective copper-gold deposits, and another sub-area has prospective chromite and platinum group element (PGE) deposits.<sup>123</sup> In 2007, the Chinese government signed a 30-year deal with the Afghan Central Government to mine in the southern part of the Aynak AOI, but after being rocketed by locals, discovering Buddhist ruins, and promising (and not delivering) to hire Afghan locals for mining, their efforts have been temporarily curtailed.<sup>124</sup> The northern parts of the Aynak AOI have been drilled by the TFBSO and may soon be bid out to local miners because of local Afghan knowledge of the area's minerals. The western part of the Aynak AOI has more potential for chromite and asbestos.<sup>125</sup>

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<sup>121</sup> The approximate total numbers of ALP forces were estimated to be 12,900 in March 2012; and have grown significantly and proportionately to 22,000 in July 2013. While the numbers have grown, no map was available for the July 2013 ALP forces numbers and their dispositions. Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," Working Paper, 9.

<sup>122</sup> AOIs 1-24 explained in this chapter coincide with AOIs 1-24 in Figure 2, chapter 1.

<sup>123</sup> Cliff Taylor et al., "Summary of the Aynak Copper, Cobalt, and Chromium Area of Interest," in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 2A.

<sup>124</sup> Jessica Donati and Mirwais Hoorni, "Exclusive—Chinese Halt at Flagship Mine Imperils Afghan Future," Reuters, last modified September 27, 2012, <http://uk.reuters.com/article/2012/09/27/uk-afghanistan-aynak-idUKBRE88Q0XL20120927>; Stephen Peters, comment on regarding local Afghans mining in Aynak, personal communication between the author and Dr. Jonathan Lipow of University of Nevada-Reno, July 10–12, 2013.

<sup>125</sup> Stephen G. Peters, comment on regarding local Afghans mining in Aynak, personal communication between the author and Dr. Jonathan Lipow of University of Nevada-Reno, July 10–12, 2013.

This AOI presents generally medium risks to security. Security in Kabul Province, the country's capital region, ranges from medium- to high-risk; and is high-risk in both Logar and Wardak Provinces.<sup>126</sup> In 2012, approximately 667 ALP were assigned to the area, which have since increased.<sup>127</sup> Numerous Coalition and Afghan security forces are assigned to this area to protect the country's capital and its surrounding areas.

## **2. Badakshan**

The Badakshan AOI is a 6,501 km<sup>2</sup> area in the Badakshan Province, the country's most northeastern region. It contains numerous gold deposits and prospects. The AOI's Weka Dur placer gold deposit is one of Afghanistan's largest gold-quartz veins. The AOI's district subareas of Ragh (north), Baharak (southeast), and Fayzabad (south central) maintain numerous gold prospects. A Turkish-Afghan company is the Afghan Central Government's preferred bidder in this area, although they have not initiated mining.<sup>128</sup> Locals also are conducting artisanal and placer mining in the area.<sup>129</sup> Additionally, there is iron skarn and lithium pegmatite potential in the AOI.<sup>130</sup>

This AOI presents generally low risks to security. In 2012, approximately 319 ALP were assigned to the area, which have since increased.<sup>131</sup> Few security forces have been assigned to this area, primarily due to its relatively peaceful state and remote location.

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<sup>126</sup> BBC News, "Afghan Troop Map: US and NATO Deployments."

<sup>127</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," Working Paper, 9.

<sup>128</sup> Islamic Republic of Afghanistan, "Mineral Tenders," accessed July 31, 2013, <http://www.afghanmineraltenders.com/mineral-tenders/>.

<sup>129</sup> Stephen G. Peters, comment on Badakshan during a meeting between the author and Dr. Jonathan Lipow, University of Nevada-Reno, July 10–12, 2013.

<sup>130</sup> Stephen G. Peters, "Summary of the Badakshan Gold Area of Interest" in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 3A; Stephen G. Peters, comment on the uses of natural and mineral resources during a meeting between the author and Dr. Jonathan Lipow, University of Nevada-Reno, July 10-12, 2013.

<sup>131</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," 9.

### 3. Balkhab

The Balkhab AOI is a 1,858 km<sup>2</sup> area primarily in eastern Sar-i-Pul Province with small portions of it being in southern Balkh, and western Samangan Provinces. It primarily contains deposits of copper and has coal and possibly granite-hosted gold deposits. The Balkhab subarea is 321 km<sup>2</sup> and has mostly copper.<sup>132</sup> This area was tendered, or put up for bid, by the Afghan central government in December 2012.<sup>133</sup>

This AOI presents medium risks to security.<sup>134</sup> There is no current data available regarding ALP being assigned to this area.<sup>135</sup> Security responsibilities in this area were transitioned from ISAF to Afghan National Security Forces (ANSF) on November 27, 2011, and no information is available regarding their progress.<sup>136</sup> Little news or reporting of insurgent activities has been received from this area.

### 4. Daykundi

The Daykundi AOI is a 6,838 km<sup>2</sup> area in Daykundi and Bamyan Provinces. It contains greisen tin and tungsten, a tin and tungsten skarn and vein, porphyry tin, lithium and tantalum pegmatite, and polymetallic vein prospects.<sup>137</sup> Many of these areas are extremely remote and no roads are present. Placer mining of tin and tungsten is a possibility in this area.<sup>138</sup>

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<sup>132</sup> Stephen G. Peters et al., “Summary of the Balkhab Area of Interest,” in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed., Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 4A.

<sup>133</sup> Islamic Republic of Afghanistan, “Mineral Tenders.”

<sup>134</sup> *BBC News*, “Afghan Troop Map: US and NATO Deployments.”

<sup>135</sup> Saum-Manning, “VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense,” *Small Wars Journal*; Saum-Manning, “VSO/ALP,” 9.

<sup>136</sup> North Atlantic Treaty Organization (NATO), “Inteqal: Transition to Afghan Lead,” accessed November 15, 2013, [http://www.nato.int/cps/en/natolive/topics\\_87183.htm](http://www.nato.int/cps/en/natolive/topics_87183.htm).

<sup>137</sup> Stephen G. Peters, “Summary of the Daykundi Tin, Tungsten, and Lithium Area of Interest,” in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed., Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 5A.

<sup>138</sup> Stephen G. Peters, comment on mining in Daykundi during a meeting between the author and Dr. Jonathan Lipow, University of Nevada-Reno, July 10–12, 2013.

This AOI presents generally medium security risks. Security in Daykundi Province ranges from low-risk in its northern portions to extreme-risk in its southern portions, and Bamyan Province is of low-risk.<sup>139</sup> In 2012, approximately 412 ALP were assigned to the area, which have since increased.<sup>140</sup> The transitions of security responsibilities from ISAF to ANSF were initiated in Bamyan Province on March 22, 2011; and November 27, 2011 for Daykundi Province's northern portion and May 13, 2012 for its southern portion.<sup>141</sup> No current information is available regarding the ANSF's progress in securing and stabilizing these areas.

## **5. Dusar-Shaida-Misgaran**

The Dusar-Shaida-Misgaran AOI is a 9,000 km<sup>2</sup> area in southwestern Herat and northern Farah Provinces. It contains primarily copper and tin, and has three subareas. Subarea Dusar is known for its concentrations of copper, zinc and rare gold type minerals. Subarea Shaida is known for its abundance of copper porphyry, zinc and iron ore deposits. Subarea Misgaran is known for its abundance in skarn and veins in enriched tin and lead.<sup>142</sup> This area was opened for investor bidding (or tendered) by the Afghan government in December 2012.<sup>143</sup> Interestingly, the previous Provincial Governor of Herat Province is a geologist and completed his master's thesis on the minerals in this area.<sup>144</sup>

This AOI presents generally medium security risks. Security in Herat Province ranges from low- to high-risk; and is high-risk in northern Farah.<sup>145</sup> In 2012,

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<sup>139</sup> *BBC News*, "Afghan Troop Map: US and NATO Deployments."

<sup>140</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," 9.

<sup>141</sup> NATO, "Inteqal: Transition to Afghan Lead."

<sup>142</sup> Robert Tucker et al., "Summary of the Dusar-Shaida Copper and Tin Area of Interest," in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed., Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 6A.

<sup>143</sup> Islamic Republic of Afghanistan, "Mineral Tenders."

<sup>144</sup> Stephen Peters, comment on Dusar-Shaida during a meeting between the author and Dr. Jonathan Lipow, University of Nevada-Reno, July 10–12, 2013.

<sup>145</sup> *BBC News*, "Afghan Troop Map: US and NATO Deployments."

approximately 236 ALP were assigned to the area, which have since increased.<sup>146</sup> The transitions of security responsibilities from ISAF to ANSF were initiated in Herat Province on November 27, 2011, and Farah Province on May 13, 2012.<sup>147</sup> No recent information is available regarding the ANSF's progress in securing and stabilizing these areas. The rural terrain in this AOI is relatively sparse and only sporadically populated; therefore insurgents have a distinct disadvantage in this area.

## **6. Haji-Gak**

The Haji-Gak AOI is a 2,340 km<sup>2</sup> area located in Bamyan, Parwan and Wardak Provinces. The Haji-Gak iron deposit is 36 km<sup>2</sup> and one of the largest iron ore deposits in all of Asia. Several Afghan locals know of the potential for mining in this area. The Afghan Central Government is negotiating deals with Indian investors in the Haji-Gak area, although no mining has been initiated.<sup>148</sup> Additionally, just 75 km east of this AOI, at the head of the Balkh River, copper oxide exists and mining potential is high.<sup>149</sup>

This AOI presents generally high security risks. Security in Bamyan Province is of low-risk, Parwan of medium-risk, and Wardak of high-risk.<sup>150</sup> In 2012, approximately 76 ALP were assigned to the area, which have since increased.<sup>151</sup> The transition of security responsibilities from ISAF to ANSF was initiated on March 22, 2011 in Bamyan Province and December 31, 2012 in northern Wardak Province.<sup>152</sup> No current information is available regarding the ANSF's progress in securing and stabilizing these

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<sup>146</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," 9.

<sup>147</sup> NATO, "Inteqal: Transition to Afghan Lead."

<sup>148</sup> Islamic Republic of Afghanistan, "Mineral Tenders."

<sup>149</sup> Karine Renaud et al., "Summary of the Haji-Gak Iron Area of Interest," in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 7A.

<sup>150</sup> BBC News, "Afghan Troop Map: US and NATO Deployments."

<sup>151</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," 9.

<sup>152</sup> NATO, "Inteqal: Transition to Afghan Lead."

areas. The terrain in this AOI is very mountainous, therefore difficult to traverse, and provides insurgents with a distinct advantage.

## **7. Katawas**

The Katawas gold AOI is a 478 km<sup>2</sup> area in Paktika Province's Katawas Basin. Mercury, tungsten, gold and (or) lead are present within this basin. This AOI is thought to have potential for the occurrences of small- to medium-sized placer gold, silver, mercury, and base metal deposits with near-term mineral production potential.<sup>153</sup>

This AOI presents generally high security risks.<sup>154</sup> In 2012, approximately 428 ALP were assigned to the area, which have since increased.<sup>155</sup> The transitions of security responsibilities from ISAF to ANSF in this AOI were initiated on May 13, 2012 in Paktika Province and December 31, 2012 in Ghazni Province.<sup>156</sup> No current information is available regarding the ANSF's progress in securing and stabilizing the area, which is a location where Afghan insurgents have been known to operate.

## **8. Kharnak-Kanjar**

The Kharnak-Kanjar mercury AOI is a 380 km northeasterly running belt of mercury prospects primarily in Ghor Province. This AOI is located mostly in Pasaband District, in Ghor Province with small portions of it in Du Lina, Khadir and Taywarah

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<sup>153</sup> Stephen G. Peters and Bernard Hubbard, "Summary of the Katawas Area of Interest," in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 8A.

<sup>154</sup> BBC News, "Afghan Troop Map: US and NATO Deployments."

<sup>155</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," 9.

<sup>156</sup> NATO, "Inteqal: Transition to Afghan Lead."



Districts.<sup>157</sup> There is potential here for artisanal production of mercury by retort technology. Gold may also be present within this belt.<sup>158</sup>

This AOI presents generally medium risks to security.<sup>159</sup> In 2012, approximately 273 ALP were assigned to the area, which have since increased.<sup>160</sup> The transition of security responsibilities from ISAF to ANSF in the majority of this AOI was initiated on December 31, 2012.<sup>161</sup> Insurgent activities in this AOI have been relatively insignificant, although no current information is available regarding the ANSF's progress in securing and stabilizing the area.

## **9. Kundalan**

The Kundalan copper and gold AOI is a 2,576 km<sup>2</sup> area spanning both Zabul and Kandahar Provinces. Its internal subareas are the Charsu-Ghambad, Baghawan-Garangh and Kunang skarns. Mineral deposits in this AOI are porphyry copper-gold, copper-(gold) skarn, gold-rich polymetallic veins and gold-rich skarn deposits. The majority of the mineral data on this AOI came from the USSR and its Eastern European allies between the 1950s and 1985. They did extensive sampling and trenching in the area and developed copper and gold resources in the main Kundalan ore body. A number of additional prospects are present within this AOI that have not yet received extensive exploration.<sup>162</sup>

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<sup>157</sup> George Fernet, "Summary of the Kharnak-Kanjar Mercury Area of Interest," in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 9A.

<sup>158</sup> Stephen G. Peters, comment on Ghor Province resources during a meeting between the author and Dr. Jonathan Lipow, University of Nevada-Reno, July 10-12, 2013.

<sup>159</sup> *BBC News*, "Afghan Troop Map: US and NATO Deployments."

<sup>160</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," 9.

<sup>161</sup> NATO, "Inteqal: Transition to Afghan Lead."

<sup>162</sup> Stephen G. Peters et al., "Summary of the Kundalan Copper and Gold Area of Interest," in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 10A; Stephen Peters, comment on Kundalan copper during a meeting between author and Dr. Jonathan Lipow, University of Nevada-Reno, July 10-12, 2013.

This AOI presents generally high risks to security.<sup>163</sup> In 2012, approximately 288 ALP were assigned to the area, which have since increased.<sup>164</sup> This AOI's initiation of the transition of security responsibilities from ISAF to ANSF occurred on June 18, 2013.<sup>165</sup> This is an area where insurgents have operated very freely for over a decade. No information is available regarding the area's recently introduced ANSF and their progress in securing and stabilizing the area.

## **10. Nalbandon**

The Nalbandon lead and zinc AOI is a 6,250 km<sup>2</sup> area in both Ghor and eastern Herat Provinces. Specifically, this AOI is in the eastern half of Shahrak District, southwestern quarters of Tulak and Chisti Sharif Districts in Ghor Province. This AOI contains numerous sediment-hosted Mississippi Valley-type lead-zinc prospects. Germans and Russians examined the minerals in this AOI very extensively between 1963 and 1978.<sup>166</sup>

This AOI presents generally medium risks to security.<sup>167</sup> In 2012, approximately 129 ALP were assigned to the area, which have since increased.<sup>168</sup> The initiation of the transition of security responsibilities from ISAF to ANSF in the majority of this AOI occurred on December, 31, 2012.<sup>169</sup> No current information is available regarding the area's recently introduced ANSF and their progress in securing and stabilizing the area.

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<sup>163</sup> *BBC News*, "Afghan Troop Map: US and NATO Deployments."

<sup>164</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," 9.

<sup>165</sup> NATO, "Inteqal: Transition to Afghan lead."

<sup>166</sup> Gregory Fernette and Karine Renaud, "Summary of the Nalbadon Lead and Zince Area of Interest," in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 11A.

<sup>167</sup> *BBC News*, "Afghan Troop Map: US and NATO Deployments."

<sup>168</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," 9.

<sup>169</sup> NATO, "Inteqal: Transition to Afghan Lead."

## **11. North Takhar**

The North Takhar Placer Gold AOI is a 6,000 km<sup>2</sup> area in Takhar and eastern Badakhshan Provinces, and borders Tajikistan to the north. It is Afghanistan's largest placer gold deposit and contains several commercial grade gold reserves. The area's largest deposit, Samti, has estimated reserves of more than 30,000 kg of gold.<sup>170</sup> This area was mined by the ancient Greeks and has seen substantial artisanal and placer mining activity since then.<sup>171</sup>

This AOI presents generally low risks to security.<sup>172</sup> In 2012, approximately 1,157 ALP were assigned to the area, which have since increased.<sup>173</sup> The initiation of the transition of security responsibilities from ISAF to ANSF in the majority of this AOI occurred on November 27, 2011.<sup>174</sup> The ANSF have had almost two years to stabilize this area, although no current information is available regarding their progress in the area.

## **12. Panjshir Valley**

The Panjshir Valley AOI is a 959 km<sup>2</sup> area in northwestern Parwan Province's Hisa-e-Awal Panjshir District. Silver-iron, pegmatite, and emerald deposits lie within its central area and some subareas. This area has been mined for thousands of years, and while it has steep terrain and is difficult to access, the Panjshir Valley is a popular and peaceful place to travel.<sup>175</sup>

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<sup>170</sup> Peter Chirico et al., "Summary of the North Takhar Placer Gold Area of Interest," in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 12A.

<sup>171</sup> Stephen G. Peters, comment on regarding local Afghans mining in Northern Takhar. During a meeting between the author and Dr. Jonathan Lipow, University of Nevada-Reno, July 10–12, 2013.

<sup>172</sup> *BBC News*, "Afghan Troop Map: US and NATO Deployments."

<sup>173</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," 9.

<sup>174</sup> NATO, "Inteqal: Transition to Afghan Lead."

<sup>175</sup> Stephen G. Peters, "Summary of the Panjshir Valley Emerald, Iron, and Silver Area of Interest," in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 13A.

This AOI presents low risks to security.<sup>176</sup> There is no current data available regarding ALP being assigned to this area.<sup>177</sup> This AOI's initiation of the transition of security responsibilities from ISAF to ANSF occurred on March 22, 2011.<sup>178</sup> The ANSF have had almost two years to stabilize this historically high-valued area, although no current information is available regarding their progress in securing and stabilizing the area.

### **13. Tourmaline**

The Tourmaline tin AOI is a 1,365 km<sup>2</sup> area in Farah Province's western Anar Darah District and portions of Shin Dand District of Herat Province. This AOI contains tin and tungsten veins, porphyry or greisen, and stockwork deposits.<sup>179</sup> The main tourmaline tin prospect was trenched and sampled by the Soviets. There are also tin placer deposits in the area.<sup>180</sup>

This AOI presents medium risks to security.<sup>181</sup> In 2012, approximately 115 ALP were assigned to the area, which have since increased.<sup>182</sup> The transitions of security responsibilities from ISAF to ANSF in this AOI were first initiated on March 13, 2012, and more recently on December 31, 2012.<sup>183</sup> The ANSF have experienced success in their attempts to secure in this area, which is largely due to the support of Afghan locals and leaders.

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<sup>176</sup> *BBC News*, "Afghan troop map: US and NATO deployments."

<sup>177</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," 9.

<sup>178</sup> NATO, "Inteqal: Transition to Afghan lead."

<sup>179</sup> Stephen Peters et al., eds., *Summary of the Tourmaline Tin Area of Interest*, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), 14A.

<sup>180</sup> Stephen Peters, comment on the Tourmaline AOI during a meeting between the author and Dr. Jonathan Lipow, University of Nevada-Reno, July 10-12, 2013.

<sup>181</sup> *BBC News*, "Afghan troop map: US and NATO deployments."

<sup>182</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," 9.

<sup>183</sup> NATO, "Inteqal: Transition to Afghan Lead."

#### **14. Zarkashan**

The Zarkashan gold and copper AOI is a 1,692 km<sup>2</sup> area in Ghazni Province's Ab-Band, Afghandab, Gelan, Glarabaghn, Jaghuri and Mokur Districts. This AOI has three subareas, which include the Luman-Tamaki gold, Bolo gold, and Zarkashan mine subareas. These areas are considered of high potential for placer and artisanal mining, and commercial mineralized rock. The area was tendered in December, 2012.<sup>184</sup> Very little gold and copper collection has occurred in these areas.

This AOI presents generally high risks to security.<sup>185</sup> In 2012, approximately 514 ALP were assigned to the area, which have since increased.<sup>186</sup> Security responsibilities in this AOI were first transitioned from ISAF to ANSF on May 13, 2012 in its northern portion, and later on December 31, 2012 in its southern portion.<sup>187</sup> No information is available regarding the ANSF's newly established efforts and effectiveness in this volatile and insurgent-saturated area.

#### **15. Baghlan**

The Baghlan clay and gypsum AOI is a 1,800 km<sup>2</sup> area in three different provinces: Talawa Barfak District, Baghlan Province; Kahmard District, Bamiyan Province; and Ruyi Du A, Samangan Province. Clay, gypsum, and bauxite are the minerals in this AOI. This area lies within a rectangular region of mountains and valleys

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<sup>184</sup> Stephen G. Peters et al., "Summary of Zarkashan Copper and Gold Area of Interest," in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 15A; "Islamic Republic of Afghanistan—Mineral Tenders," July 31, 2013. <http://www.afghanmineraltenders.com/mineral-tenders/>.

<sup>185</sup> *BBC News*, "Afghan Troop Map: US and NATO Deployments."

<sup>186</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," Working Paper, 9.

<sup>187</sup> NATO, "Inteqal: Transition to Afghan Lead."

running southwest and northeast with the Hindu Kush range. This region offers high potential for further exploration, although is relatively inaccessible.<sup>188</sup>

This AOI presents generally medium risks to security.<sup>189</sup> There is no current data available regarding ALP being employed in this area.<sup>190</sup> Security responsibilities in this AOI were transitioned from ISAF to ANSF on March 22, 2011 in its southern portion, and later on November 27, 2011 in its northern portion.<sup>191</sup> The ANSF have had almost two years to stabilize this area, although no current information is available regarding their progress in securing and stabilizing the area.

## **16. Bakhud**

The Bakhud fluorite AOI is a 3,637 km<sup>2</sup> area in southern Uruzgan and northern Kandahar Provinces. A variety of minerals exist in this AOI, including chalcopyrite, barite, galena, sphalerite, tennantite, and fluorite. Fluorite is considered the most economically promising commodity in this AOI.<sup>192</sup> This AOI was recently bid out and members of the Afghan Geological Survey have planned for visits to the area for further assessments.<sup>193</sup>

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<sup>188</sup> Victor Mossotti et al., “Summary for the Baglan Clay and Gypsum Area of Interest,” in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 17A.

<sup>189</sup> *BBC News*, “Afghan Troop Map: US and NATO Deployments.”

<sup>190</sup> Saum-Manning, “VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense,” *Small Wars Journal*; Saum-Manning, “VSO/ALP,” 9.

<sup>191</sup> NATO, “Inteqal: Transition to Afghan Lead.”

<sup>192</sup> Victor Mossotti, “Summary of Bakhud Fluorite Area of Interest,” in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 18A.

<sup>193</sup> Stephen G. Peters, comment on regarding mining in Bakhud. During a meeting between the author and Dr. Jonathan Lipow, University of Nevada-Reno, July 10–12, 2013.

This AOI presents generally high risks to security.<sup>194</sup> In 2012, approximately 788 ALP were assigned to the area, which have since increased.<sup>195</sup> This AOI's first initiation of the transition of security responsibilities from ISAF to ANSF occurred on June May 13, 2012 in its northern portion, and second on June 18, 2013.<sup>196</sup> This is an area where insurgents have operated freely and used as a safe haven for over a decade. No recent information is available regarding the area's recently introduced ANSF and their progress in securing and stabilizing the area.

## **17. Dudkash**

The Dudkash industrial minerals AOI is a 4,922 km<sup>2</sup> area of mountainous, semi-mountainous and basin terrain, overlapping north and central Baghlan Provinces, and southeastern Kunduz and Takhar Provinces. The industrial minerals in this AOI include cement-grade limestone, dolomite, celestite, gypsum, brick clay, bauxite-laterite, and coal. Coal is currently mined in Nahrin District, Baghlan Province.<sup>197</sup>

This AOI presents low risks to security.<sup>198</sup> In 2012, approximately 729 ALP were assigned to the area, which have since increased.<sup>199</sup> This AOI's first initiation of the transition of security responsibilities from ISAF to ANSF occurred on June May 13, 2012, and second on December 31, 2012.<sup>200</sup> No recent information is available regarding the area's recently introduced ANSF and their progress in securing and stabilizing the area.

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<sup>194</sup> *BBC News*, "Afghan Troop Map: US and NATO Deployments."

<sup>195</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," 9.

<sup>196</sup> NATO, "Inteqal: Transition to Afghan Lead."

<sup>197</sup> Victor Mossotti et al., "Summary for the Dudkash Industrial Minerals Area of Interest." in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 19A.

<sup>198</sup> *BBC News*, "Afghan Troop Map: US and NATO Deployments."

<sup>199</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," 9.

<sup>200</sup> NATO, "Inteqal: Transition to Afghan Lead."

## **18. Ghunday-Achin**

The Ghunday-Achin magnesite and talc AOI is 6,095 km<sup>2</sup> and exists along the Pakistan border about 16 km south of Jalalabad in Nangahar and Paktya Provinces. At Achin, the two major talc deposits are estimated to be 1.25 million and 31.2 million metric tons, both with high (76 percent and 81 percent) contents of pure talc. More than 50,000 metric tons of talc have been mined in Ghunday, although it is unknown as to when. At Achin, large magnesite bodies exist, and are suspected to be at a similar scale to the talc endowment in the area.<sup>201</sup>

This AOI presents high risks to security.<sup>202</sup> In 2012, approximately 1,185 ALP were assigned to the area, which have since increased.<sup>203</sup> This AOI's first initiation of the transition of security responsibilities from ISAF to ANSF occurred on June May 13, 2012, and second on June 18, 2013.<sup>204</sup> No recent information is available regarding the area's recently introduced ANSF and their progress in securing and stabilizing the area. This area has been commonly known to be saturated with insurgents, many of whom conduct nefarious cross-border activities with Pakistan.

## **19. Khanneshin**

The Khanneshin carbonatite AOI is 6,750 km<sup>2</sup> in the Registan Desert of south-central Helmand Province. The rare earth elements (REE) Carbonatite, uranium and phosphorous exist in this area. China currently produces more than 95 percent of the

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<sup>201</sup> Mark Cocker, "Summary for the Mineral Information Package for the Ghunday-Achin Magnesite and Talc Area of Interest," in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 20A.

<sup>202</sup> *BBC News*, "Afghan Troop Map: US and NATO Deployments."

<sup>203</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," 9.

<sup>204</sup> NATO, "Inteqal: Transition to Afghan Lead."



earth's REE, therefore this area is strategically important due the amount of REE in the area and the world's demand for it.<sup>205</sup> The carbonatite complex may also have potential for uranium, cement limestone and phosphate.<sup>206</sup>

This AOI presents high risks to security.<sup>207</sup> In 2012, approximately 87 ALP were assigned to the area, which have since increased.<sup>208</sup> This AOI's initiation of the transition of security responsibilities from ISAF to ANSF occurred on June May 13, 2012.<sup>209</sup> No recent information is available regarding the area's recently introduced ANSF and their progress in securing and stabilizing the area. This area has been known to experience insurgent activities, most of which are based-out of the province's northern region and Kandahar Province.

## **20. Kunduz**

The Kunduz AOI is a 2,266 km<sup>2</sup> area in the southern part of Kunduz and northern part of Baghlan Province. Minerals in the area include a celestite deposit in Kartau and Kartaw Districts, and geology and infrastructure in the area indicate potential for sand and gravel, gypsum, limestone, sulfur and rocks suitable for dimension stone deposits.<sup>210</sup>

This AOI presents medium risks to security.<sup>211</sup> In 2012, approximately 453 ALP were assigned to the area, which have since increased.<sup>212</sup> This AOI's initiation of the

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<sup>205</sup> Robert Tucker et al., "Summary of the Mineral Information Packages for the Khanneshin Carbonite Area of Interest," in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 21A.

<sup>206</sup> Stephen G. Peters, comment on regarding mining in Khanneshin. During a meeting between the author and Dr. Jonathan Lipow, University of Nevada-Reno, July 10–12, 2013.

<sup>207</sup> BBC News, "Afghan Troop Map: US and NATO Deployments."

<sup>208</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," 9.

<sup>209</sup> NATO, "Inteqal: Transition to Afghan Lead."

<sup>210</sup> Greta J. Orris, "Summary of the Kunduz Area of Interest," in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan* vol II, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack (75–89), Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 22A.

<sup>211</sup> BBC News, "Afghan Troop Map: US and NATO Deployments."

transition of security responsibilities from ISAF to ANSF occurred on June May 13, 2012.<sup>213</sup> No recent information is available regarding the area's recently introduced ANSF and their progress in securing and stabilizing the area. This area has been known to experience insurgent activities, although Coalition forces have maintained important relationships with key leaders in the area. These relationships suggests an Afghan desire for stability and security.

## **21. North Herat**

The North Herat AOI is a 12,314 km<sup>2</sup> polygon shaped area in northwestern Herat Province. Limestone exists in its primary 9,684 km<sup>2</sup> area in the northwest and limestone-clay in its 2,630 km<sup>2</sup> southern portion. Additionally, a barite vein and iron skarn, marble, and brick clay exist in the AOI.<sup>214</sup>

This AOI presents medium risks to security.<sup>215</sup> In 2012, approximately 242 ALP were assigned to the area, and this number has since increased.<sup>216</sup> This AOI's initiation of the transition of security responsibilities from ISAF to ANSF occurred on November 27, 2011.<sup>217</sup> No recent information is available regarding the ANSF and their progress in securing and stabilizing the area. Insurgent activities in this AOI have been mostly sporadic, which may partially be due to the key relationships between Coalition Forces and influential Afghans in the area.

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<sup>212</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," Small Wars Journal; Saum-Manning, "VSO/ALP," 9.

<sup>213</sup> NATO, "Inteqal: Transition to Afghan Lead."

<sup>214</sup> Victor Mossotti, "Summary of the North Herat Area of Interest," in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 23A.

<sup>215</sup> *BBC News*, "Afghan Troop Map: US and NATO Deployments."

<sup>216</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," Small Wars Journal; Saum-Manning, "VSO/ALP," 9.

<sup>217</sup> NATO, "Inteqal: Transition to Afghan Lead."

## **22. Nuristan**

The Nuristan rare-metal pegmatite AOI is primarily located in the east-central part of Nuristan Province and is located in the Hindu Kush Mountains. This AOI contains four main pegmatite fields: Pacigram, Paron, Kantiway and Darrahe Pec. The demand for rare metals is high due to their individual properties that are important for high tech industrial uses. Pegmatites in this area of Afghanistan are considered by many as the largest concentration of lithium-bearing pegmatites in the world.<sup>218</sup>

This AOI presents high risks to security.<sup>219</sup> In 2012, approximately 358 ALP were assigned to the area, and this number has since increased.<sup>220</sup> This AOI's initiation of the transition of security responsibilities from ISAF to ANSF occurred just recently on June 18, 2013.<sup>221</sup> No recent information is available regarding the ANSF and their progress in securing and stabilizing the area. Insurgent activities in this AOI have been intense and consistent, which is likely due to its highly challenging terrain and close proximity to the Pakistani border.

## **23. Southern Helmand**

The Southern Helmand AOI is a 10,000 km<sup>2</sup> in southern Helmand Province along the border with Pakistan. The Chagai Hills located within this AOI contain travertine

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<sup>218</sup> Mark Cocker, "Summary for the Mineral Information Package for the Nuristan Rare-Metal Pegmatite Area of Interest," in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 24A.

<sup>219</sup> *BBC News*, "Afghan Troop Map: US and NATO Deployments."

<sup>220</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," 9.

<sup>221</sup> NATO, "Inteqal: Transition to Afghan Lead."

deposits that are being exploited and the area has significant potential for porphyry copper deposits.<sup>222</sup> Porphyry copper and porphyry copper-gold deposits are present along the same geologic belts to the south in Pakistan.<sup>223</sup>

This AOI presents generally high risks to security.<sup>224</sup> In 2012, approximately 87 ALP were assigned to the area, which have since increased.<sup>225</sup> This AOI's first initiation of the transition of security responsibilities from ISAF to ANSF occurred on May 13, 2012, and second more recently on June 18, 2013.<sup>226</sup> No recent information is available regarding the ANSF and their progress in securing and stabilizing the area. Coalition forces have remained heavily involved in this area for a decade and insurgent activities have remained intense and consistent. This is likely due to its close proximity to the Pakistani border and being a Pashtun controlled area, an Afghan ethnicity common to that of the insurgents.

## **24. Takhar**

The Takhar AOI is located in central Takhar Province. It contains evaporite-related minerals such as salt, gypsum, and celestite deposits. Additionally, clay, coal and dimension stone exist, and there are strong prospects for mercury, sand, gravel, limestone, sulfur, and other commodities in the area. This AOI contains potential resources that may support a placer and artisanal mining industry, but there is potential for larger industries and markets related to minerals in this AOI.<sup>227</sup>

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<sup>222</sup> Douglas Stoesser, "Summary of the South Helmand Travertine Area of Interest and Geology and Mineral Resource Potential of the Chagai Hills Region," in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 25A.

<sup>223</sup> Stephen Peters, comment on regarding mining in Helmand. During a meeting between the author and Dr. Jonathan Lipow, University of Nevada-Reno, July 10–12, 2013.

<sup>224</sup> *BBC News*, "Afghan Troop Map: US and NATO Deployments."

<sup>225</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," 9.

<sup>226</sup> NATO, "Inteqal: Transition to Afghan Lead."

<sup>227</sup> Greta J. Orris, "Summary for the Takhar Area of Interest," in *Summaries of Important Areas in Mineral Investment and Production Opportunities of Nonfuel Minerals in Afghanistan*, ed. Stephen G. Peters, Trude V. V. King, Thomas J. Mack, and Michael P. Chornack, Open-File Report 2011-1204 (Afghanistan Project No. 199) (Reston, VA: U.S. Geological Survey, 2011), CD-ROM, 26A.

This AOI presents low risks to security.<sup>228</sup> In 2012, approximately 119 ALP were assigned to the area, and this number has since increased.<sup>229</sup> This AOI's initiation of the transition of security responsibilities from ISAF to ANSF occurred on November 27, 2011.<sup>230</sup> The ANSF have had about two years to gain influence in this area, although no information is available regarding the ANSF's influence in the region. Coalition forces have remained heavily involved in this area for a decade, and it has not been an area commonly known for consistent and over-aggressive insurgent activities.

## A. CONCLUSION

The USGS has provided a more detailed illustration of these AOIs on the map shown in Figure 12. This map is the result of the application of advanced mineral assessment techniques and incorporates the more qualitative assessments made by the Russians and British in the past. Known mineral occurrences (small dots) and promising areas (grey boxes) identified by the USGS and Joint Mineral Resources Assessment Team are likely locations for opportunities to exploit mineral deposits in commercial quantities, with the primary export commodities being copper, iron, lead, zinc, mercury, rare-earth elements, uranium, chromite, and gold. Potential commercial deposits of industrial minerals for local use are also identified, and include asbestos, barite, celestite, clay, pegmatite minerals and elements, potash, sulfur, talc, magnesite, stone, glass sands, limestone, sand, and gravel.<sup>231</sup>

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<sup>228</sup> *BBC News*, "Afghan Troop Map: US and NATO Deployments."

<sup>229</sup> Saum-Manning, "VSO/ALP: Comparing Past and Current Challenges to Afghan Local Defense," *Small Wars Journal*; Saum-Manning, "VSO/ALP," 9.

<sup>230</sup> NATO, *Inteqal: Transition to Afghan Lead*."

<sup>231</sup> Stephen G. Peters et al., eds., *Preliminary Non-Fuel Mineral Resource Assessment*, vol. I– II, Open File Report 2007-1214 (USGS Afghanistan Project No. 157) (Reston, CA: U.S. Geological Survey, 2007), xxxvi.

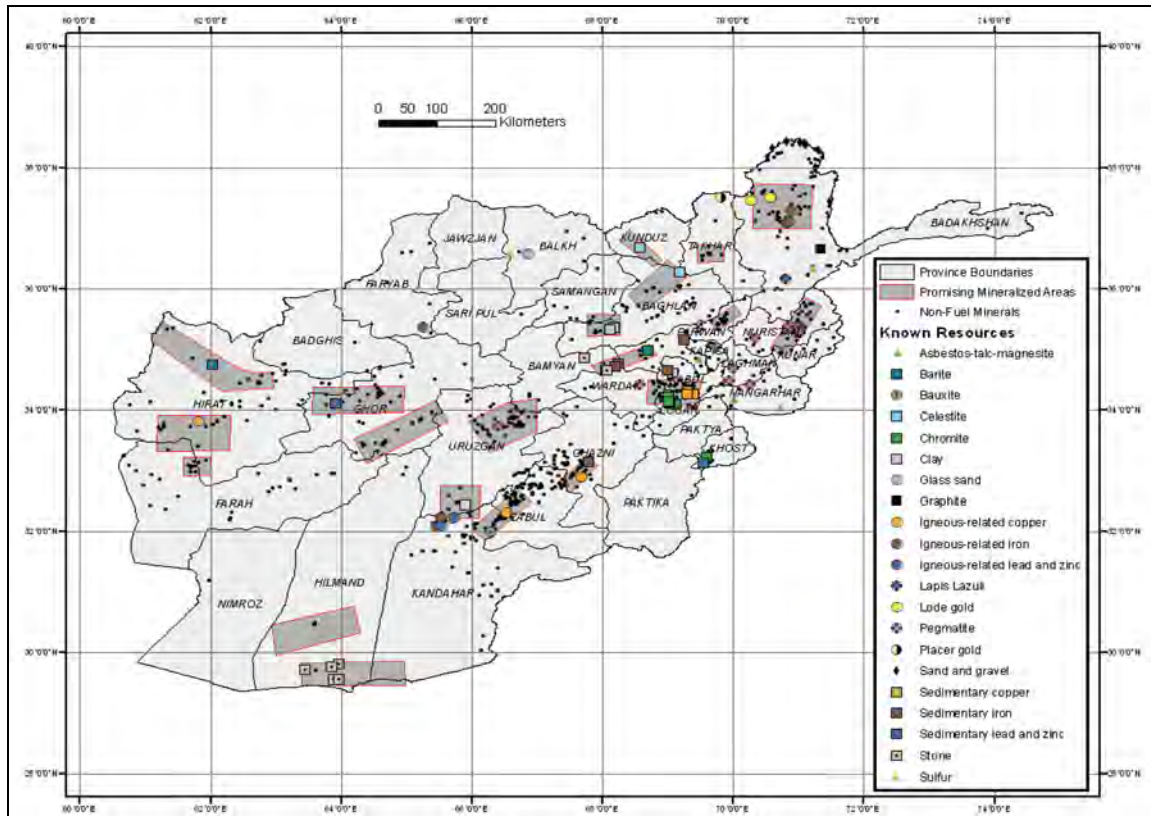


Figure 10. This map of Afghanistan illustrates the country's known mineral occurrences (small dots) and 20 areas of priority identified by the USGS and Afghan Geological Survey Joint Mineral Assessment Team and have "promise for economic occurrences of different mineral types (large symbols)."<sup>232</sup>

<sup>232</sup> Ibid.

## **IV. THE LOGIC OF THE RESOURCE NETWORK STRATEGY**

At the core of this Resource Network Strategy lie three inter-related ideas. The first is that by offering local Afghan communities assistance in the small-scale development of natural resources, the VSO program could become more attractive to “rational” rural Afghan communities. The second is that development of small-scale-mining is a necessary step towards the future establishment of large-scale industrial mining in Afghanistan. The third is that the successful introduction of large-scale mining will promote social and economic change in Afghanistan that might one day secure the country and put an end to the Taliban insurgency.

The center of gravity<sup>233</sup> of each of these inter-related ideas is the Afghan people. Most Afghans are “... self-interested rational actors, and develop an investment logic to explain economic and political decisions.”<sup>234</sup> Therefore, while explaining these three inter-related ideas as they relate to the Resource Network Strategy, it will be assumed that, in general, Afghans will continue to make decisions that achieve the highest net benefits. Let us consider each of these ideas in turn.

### **A. VSO SITES AND ARTISANAL MINING**

As discussed in Chapter III, Afghanistan is well endowed with a plethora of natural and mineral resources, and has the potential to become a world class “mining district.” Yet today, there is little organized industrial-scale mining taking place in Afghanistan. Rather, there is considerable informal or illegal artisanal mining taking place, as impoverished rural Afghans literally scratch at the surface of the great wealth that lies below them in order to survive.

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<sup>233</sup> The center of gravity is explained by Clausewitz as the “hub of all power and movement, and which everything depends... the point at which all our energies should be directed.” in the Chairman of the *Joint Chiefs of Staff, Joint Publication (JP) 5-0, Joint Operation Planning* (Washington, DC: Joint Chiefs of Staff, 2011), III-22.

<sup>234</sup> Forrest D. Colburn, “Current Studies of Peasants and Rural Development: Applications of the World Political Economy Approach,” *World Politics* 34, no. 3 (1982): abstract (summary).

Currently, the Afghan government does everything in its power to discourage artisanal mining,<sup>235</sup> which it sees as an impediment to formal development of industrial scale mining. This opposition, however, does little to actually stop informal or illegal mining. Since government security forces do not physically control most of Afghanistan, there is simply no way to enforce legal restrictions on informal natural resource exploitation.<sup>236</sup>

What official government hostility to small-scale mining does is deny miners: (i) access to credit and financial services; (ii) transport infrastructure; (iii) access to best environmental and safety practices; and (iv) legal redress for any business disputes that may arise. The consequences are dire. Afghan artisanal mining is unsafe and environmentally dangerous. Productivity is low and costs are high. Worst of all, output must be sold on black markets at a significant discount to open market prices and, given that insurgents often run these black markets, a considerable portion of the resultant profits flow to the enemy. For example, TFBSO and USGS personnel have stated that to the best of their knowledge, Afghans miners paid only about 25 percent of what they should be receiving for minerals such as chromite that they are apparently selling to the Haqqani network across the international border in Pakistan.<sup>237</sup>

This reality could be changed significantly if the VSO program targeted regions where extensive artisanal mining is already taking place or where there is considerable potential for development of small-scale mining. In such areas, the VSO program could offer local communities assistance in the development of their natural resources. VSO

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<sup>235</sup>“Afghan Minister Cracks Down on Illegal Mining,” *Radio Free Europe*, July 2, 2010, accessed October 27, 2013, [http://www.rferl.org/content/Afghan\\_Minister\\_Cracks\\_Down\\_On\\_Illegal\\_Mining/2089388.html](http://www.rferl.org/content/Afghan_Minister_Cracks_Down_On_Illegal_Mining/2089388.html); Amanda Lanzillo, “Lack of Regulation Limits Afghan Gem Mining,” *Global Risk Insights*, accessed October 27, 2013, <http://globalriskinsights.com/2013/06/03/lack-of-regulation-limits-afghan-gem-mining/>; Karim Amini, “Illegal Mining in Afghanistan at an All-Time High,” *Tolo News*, July 16, 2013, accessed October 27, 2013, <http://www.tolonews.com/en/afghanistan/11241-illegal-mining-in-afghanistan-scales-a-new-high-1400-mines-extracted-illegally>.

<sup>236</sup> Emails and conversations with an Anonymous source who is the 2013 TFBSO Director of Development; Michael Chornack a current USGS hydrologist and 2010–2012 member of the TFBSO; Bob Miller a miner, geologist and senior advisor for the TFBSO 2010–2012; Steve Peters a current USGS geologist and 2010–2012 member of the TFBSO; and Emily Scott-King the minerals project lead for the TFBSO from 2010–2012.

<sup>237</sup> Ibid.



sites would offer training in best practices, access to the credit required to purchase good equipment, protection from bandits, and perhaps most important, the ability to monetize production at competitive prices.

In aggregate, this would greatly enhance the benefits that rural Afghan communities would enjoy if they hosted a VSO site and established an ALP force. If, as some evidence indicates,<sup>238</sup> Afghan peasants make rational decisions regarding their welfare when choosing whether to collaborate with Coalition forces or support the Taliban, the result would be a mass shift of support from the insurgency towards the government and the Coalition. Afghan villages in areas with large resource endowments would enjoy such significant benefits from hosting a VSO element that they would be competing for the privilege, and the insurgents would be “priced out” of competing for support through large portions of the country.

The trial effort to promote artisanal mining in Kunar Province (explained in Chapter I) illustrates the great potential that such an initiative would have in garnering local support. Between November 2011 and April 2012, USSOF based at FOB Penich in Kas Kunar District (Kunar Province) hosted a TFBSO pilot program that offered artisanal chromite miners the opportunity to sell their ore to foreign investors. The results were stunning—over 60 informal local miners scattered throughout Kunar participated in the program and a total 45 metric tons (99,000 lbs.) of chromite ore were consolidated at FOB Penich by Afghan miners.<sup>239</sup> Word of the effort spread, and miners from other regions began to approach the TFBSO and ask if they could establish similar programs in their areas as well. In return, explicit offers were made by several Afghans to drive out insurgents and safeguard the safety of Coalition personnel involved in the initiative. Unfortunately, the USSOF and TFBSO initiative at FOB Penich was discontinued after the Afghan Ministry of Mines determined that the mining activity in Kunar was illegal pending completion of a comprehensive mining law.

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<sup>238</sup> Colburn, “Peasants and Rural Development,” *World Politics* 34.

<sup>239</sup> Anonymous TFBSO member, July, 2013; Peters, July, 2013; Miller, August, 2013; TFBSO Memorandum, “TFBSO Phase II Village Stability Operations Program Assessment” (TFBSO memorandum at Pentagon, Washington DC, April 17, 2012), 3, received from Emily Scott-King in email to author, August 17, 2013.

## **B. “MINING BRINGS MINING”**

In interviews and discussions with USGS geologists and senior managers<sup>240</sup> of mining firms, I was told repeatedly that—contrary to the position of the Afghan Ministry of Mines—promotion and development of a thriving small scale mining industry in Afghanistan would actually facilitate the establishment of the large scale industrial mines required to fulfill the economic potential embodied in Afghanistan’s mineral resources. Some interviewees referred to the need to develop a “mining culture” in Afghanistan, while others simply stated that “mining brings mining.”<sup>241</sup>

In economic terms, what they were saying was that mining is an industry that enjoys “increasing economies of scope”—that it is efficient to engage in mining in an area where a lot of other people are engaged in mining. Examples of industries with such increasing economies of scope include Hollywood (film and entertainment) and Silicon Valley (information technology). Mining exhibits increasing returns to scope for similar reasons. Mines require an entire ecosystem of suppliers. They also require a lot of specialized manpower, and it is common for miners to move from mine to mine depending on where their skills are required. In addition, interviewees repeatedly emphasized that industrial scale exploration efforts always began with a careful analysis of what artisanal miners had already found and where they were operating. Indeed, I was told that prospectors even look for evidence of ancient mining activity!

## **C. LARGE-SCALE MINING**

When the USGS issued its final 2011 report on Afghanistan, there was considerable excitement in Kabul, where government officials assumed that representatives of global mining majors like BHP and Rio Tinto would soon be at their

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<sup>240</sup> Interviews were conducted with between the author and Corrado De Gasperis, Director, President & Chief Executive Officer, Comstock Mining, Virginia City, NV; and Robert Stepper, General Manager, Coeur Rochester, Lovelock, NV on July 11–12, 2013.

<sup>241</sup> This information was gained through emails and conversations with an anonymous source who is the 2013 TFBSO Director of Development; Michael Chornack a current USGS hydrologist and 2010–2012 member of the TFBSO; Corrado De Gasperis, Director, President & Chief Executive Officer, Comstock Mining, Virginia City, NV; Bob Miller a miner, geologist and senior advisor for the TFBSO 2010–2012; Steve Peters a current USGS geologist and 2010–2012 member of the TFBSO; Emily Scott-King the minerals project lead for the TFBSO from 2010–2012; and Robert Stepper, General Manager, Coeur Rochester, Lovelock, NV from June-August, 2013.

doorsteps. There was also considerable excitement within the Coalition, with General Petraeus stating that Afghanistan's mineral endowment has "stunning potential" and is "potentially hugely significant," in the conflict with the Taliban.<sup>242</sup> Even Mullah Omar, the Taliban's highly influential leader, has stated to the Afghan public that—should they win—they would make an active effort to develop the great wealth embodied in the country's natural resources.<sup>243</sup> But nothing has happened.

According to interviewees, there are three reasons why marquee-mining firms have yet to show serious interest in Afghanistan. One reason is the security conditions that prevail on the ground.<sup>244</sup> For example, representatives of the Chinese firm apparently trying to develop the Aynak copper deposit in 2012 found themselves on the receiving end of a barrage of rocket attacks in Logar Province. The industry majors do not like to operate in areas where the locals are attacking them.

The second reason is the utter confusion that surrounds the legal status of natural resource initiatives in Afghanistan. A coherent Mining Law still eludes the Afghan government, and in its absence, only the most speculative (and often least competent) mining firms are willing to gamble that their investments in Afghanistan will eventually pay off.<sup>245</sup>

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<sup>242</sup> "Report: \$1 Trillion in Untapped Minerals Found in Afghanistan," *CNN*, June 14, 2010, accessed October 27, 2013, <http://news.blogs.cnn.com/2010/06/14/report-1-trillion-in-untapped-minerals-found-in-afghanistan/>.

<sup>243</sup> Amie Ferris-Rotman, "RPT-Afghan Taliban Say Want to Develop Mining Sector," Reuters, August 29, 2011, <http://www.reuters.com/article/2011/08/29/afghanistan-taliban-mining-idAFL4E7JT1IZ20110829>.

<sup>244</sup> Tarek Ghani, September 17, 2013, comment on thesis to Dr. Jonathan Lipow (an advisor for this thesis), at UC Berkeley, CA. Tarek Ghani is a Ph.D. candidate in Business and Public Policy at UC Berkeley's Haas School of Business, a native Afghan, and the son of Ashraf Ghani. Ashraf Ghani was the former chancellor of Kabul University, worked for the World Bank on international development and assistance, and was Afghanistan's Minister of Finance from 2002–2004. Ashraf Ghani is the current Chairman for the Institute of State Effectiveness, which was established in Afghanistan in 2005 to improve states' ability to serve the citizens. Anonymous TFBSO member, July, 2013; Peters, July, 2013; Miller, August, 2013; Scott-King, personal communications with author, August, 2013.

<sup>245</sup> *Ibid.*

Finally, the cost of exploration and production in Afghanistan is high, to a great extent due to the absence of a well-developed and thriving artisanal mining industry that—as mentioned above—appears to be a necessary prerequisite for successful industrial scale mining.<sup>246</sup>

Clearly, it is beyond the capacity of USSOCOM, or even the Coalition as a whole, to assure that a sensible mining law is implemented. Only the Afghan government can do that. But implementation of the Resource Network Strategy—outlined in detail in the next chapter—should establish both a secure environment in areas with important natural resource endowments, as well as a thriving artisanal mining industry. In other words, the Resource Network Strategy could overcome most of the obstacles that impede the development of an industrial scale mining industry in Afghanistan.

This chapter's three inter-related ideas lie at the core of the Resource Network Strategy. USSOF's assistance with small-scale development of natural and mineral resources could offer "rational" Afghans attractive benefits that exceed many others currently available to them. This strategy aims to develop small-scale mining, which is a necessary step in the eventual establishment of large-scale industrial mining in Afghanistan. The goal of realizing large-scale mining in Afghanistan could provide an impetus with significant potential for promoting social and economic change that could better secure the country, and greatly diminish insurgent violence. Chapter V, The Resource Network Strategy, provides further explanation and details of how USSOF will address these three inter-related ideas.

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<sup>246</sup> Ibid.

## V. THE RESOURCE NETWORK STRATEGY

“...planning is everything.”

Dwight D. Eisenhower, November 14, 1957<sup>247</sup>

The Resource Network Strategy is in essence, a military plan. Its execution incorporates SOF from all military services, but also engages numerous civilian entities from both the U.S. and allied nations. In writing this chapter, the guidelines of Joint Publication (JP) 5-0, *Joint Operation Planning*, were utilized. JP 5-0 “reflects the current doctrine for conducting joint, interagency, and multinational planning activities across the full range of military operations.”<sup>248</sup> The purpose of using JP 5-0 as a guide for developing this strategy is to promote and communicate a common understanding of it to as many U.S. and allied military and civilian organizations as possible.

This exposition of the Resource Network Strategy (RNS) starts with its goals and objectives, then summarizes the external environment and operational constraints and examines and offers numerous detailed recommendations for its execution. The RNS is not a detailed plan per se. Instead it is a guide to planning aimed at gaining the initiative and achieving victory in Afghanistan by using numerous SOF and civilian networks that already exist in the country.

### A. STRATEGIC GOALS AND OBJECTIVES

The Resource Network Strategy is designed to further the war aims of America and its allies. As such, it cannot be evaluated without reference to the overall Allied strategic goals and objectives in Afghanistan. For the purposes of this thesis, it is assumed that the overall Allied goal is to achieve a **victory** for NATO and Afghan government forces in the conflict that began in November 2001 with the fall of the Taliban regime. Victory is defined as being achieved when the following strategic goals are met:

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<sup>247</sup> “Dwight D. Eisenhower Presidential Library, Museum, and Boyhood Home: Quotes,” accessed October 8, 2013, [http://www.eisenhower.archives.gov/all\\_about\\_ike/quotes.html](http://www.eisenhower.archives.gov/all_about_ike/quotes.html).

<sup>248</sup> Joint Chiefs of Staff, Joint Publication (JP) 5-0, *Joint Operation Planning* (Washington, DC: Joint Chiefs of Staff, 2011), Chairman’s Letter.

1. Afghanistan poses no terrorist or insurgent threat to any other country.
2. Afghanistan is not faced with any meaningful internal security threat.
3. Afghanistan safeguards group rights for all of its communities.
4. Afghanistan safeguards the individual rights for all of its citizens in a manner consistent with the spirit of the United Nation's Universal Declaration of Human Rights.
5. The economic and social dynamic in Afghanistan assures the long-term sustainability of the achievements outlined above.
6. Non-SOF foreign military intervention is not required to maintain the status quo.

The purpose of the Resource Network Strategy is to offer decision makers a credible strategic concept that realistically offers NATO and the Afghan Government a roadmap for advancing towards all six goals outlined above. This strategy's objectives are aimed to:

1. Deny insurgents access to revenue currently being earned from illegal mining.
2. Create significant and sustainable economic incentives for local regions that cooperate with Coalition forces and assist in defeating insurgents in their area.
3. Physically secure high value mining areas.
4. Promote the small-scale artisanal mining industry.
5. Increase awareness and understanding in the international mining industry regarding opportunities in Afghanistan.
6. Promote economic interdependence and integration between different Afghan communities, and between communities and the central government of Afghanistan.

How do these objectives advance the Coalition's overall goals?

1. (Objective 1) The reduction of financial resources available to the Taliban and Haqqani Network would reduce each group's threat capabilities and the overall effectiveness of their insurgencies in Afghanistan and Pakistan.
2. (Objective 2) Establishing conditions and incentives for local populations to commit themselves to COIN efforts enabled by the VSO/ALP program would also further the goals of domestic stability and reduce the security threat to Pakistan that emanates from Afghanistan.
3. (Objective 3) Secure mining conditions in Afghanistan will contribute to the establishment of long-term economic and social dynamics of development and industrialization. Coalition control of mining areas, in

partnership with local communities, will help safeguard communal and individual rights that are often taken advantage of during mining booms.

4. (Objective 4) Assistance for the Afghan mining industry in reaching the critical mass required for large-scale initiatives to become viable will contribute to a positive economic dynamic and also aid in safeguarding communal and individual rights.
5. (Objective 5) An increased understanding of the opportunities in Afghanistan by the international mining industry will make it easier for the major resource extraction firms to analyze and evaluate the viability of large-scale initiatives that will significantly advance the goals of long-term economic and social sustainability.
6. (Objective 6) Enabling Afghan communities to become more economically interdependent will strengthen the country's national identity, nationhood, and the Afghan Government's political legitimacy.

## **B. EXTERNAL ENVIRONMENT AND OPERATIONAL CONSTRAINTS**

In developing the Resource Network Strategy, the following stylized facts are assumed regarding the external environment that has to be appreciated and/or overcome:

1. NATO combat forces will withdraw from Afghanistan by 2014 as planned.
2. USSOCOM efforts in Afghanistan will be allowed to continue indefinitely beyond that date.
3. This USSOCOM effort will include sufficient USSOF and associated assets to maintain and support 100 village stability operations (VSO) sites.
4. There will be little political support in the U.S. and other NATO countries for continued involvement in Afghanistan, little appetite for additional expenditures in support of the mission there, and little tolerance for activities that result in additional allied casualties.
5. The Afghan central government will view policies, programs and initiatives that bypass or do not involve it with skepticism and suspicion.
6. Current efforts to develop flagship mining projects will continue to flounder due to poor security conditions, inexperience at the Ministry of Mines (MoM), and the absence of the economies of scope<sup>249</sup> offered by development of a "mining culture."

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<sup>249</sup> John C. Pazar and Robert D. Willig define and explain "economies of scope" as a "... a basic and intuitively appealing property of production: cost savings, which result from the scope (rather than the scale) of the enterprise" and "There are economies of scope where it is less costly to combine two or more product lines in one firm than to produce them separately." John C. Pazar and Robert D. Willig, "Economies of Scope," *The American Economic Review* 71, 2 (1981): 268.

### C. STRATEGIC CONCEPT

This Resource Network Strategy will be pursued in three overlapping phases and are illustrated in Figure 11 (p. 86). This strategy incorporates many of the USSOF and U.S. civilian entities and their networks currently operating in Afghanistan at both the village and national levels. Three core and highly influential concepts and principles are intertwined throughout this strategy in order to achieve success in Afghanistan: the use of networks to gain influence with the Afghans, and with international mining companies and investors; basic economic principles to ensure the benefits of this strategy exceed the cost (as explained in Chapter IV); and information dominance<sup>250</sup> to ensure the appropriate information reaches the minds of the right people. Furthermore, these concepts and principles apply at the strategic, or political, operational and tactical levels. These concepts do not stand alone and mutually support one another.

**Phase I** will be initiated by USSOF shifting its highly influential VSO networks towards Afghanistan's natural and mineral resources deposit areas, and the people residing near them. These deposits must be large enough to increase Afghan community standards of living and socioeconomic development. The **decisive effort**,<sup>251</sup> USSOF VSO elements, will embed with local Afghan villages to promote, enable and support mining, and set conditions for larger mining initiatives. Further, and highly important, is an information campaign that will be established and conducted to promote and explain this strategy to Afghans and relevant international mining, investment and financial entities. This information campaign will be directed towards local, national, regional and international communities, and be conducted by USSOF, the DoS, USAID, and the Afghans. The **decisive point**<sup>252</sup> is when USSOF VSO elements have embedded in areas

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<sup>250</sup> John Arquilla, "The Strategic Implications of Information Dominance," *Strategic Review* 22.3 (July, 1994), 24.

<sup>251</sup> This thesis uses the term "decisive effort" interchangeably with "decisive operation." A decisive operation is defined as "The operation that directly accomplishes the mission." Headquarters, Department of the Army, *Army Doctrine Reference Publication 3-0, Unified Land Operations* (Washington, DC: Headquarters, Department of the Army, May 16, 2012), Glossary 2.

<sup>252</sup> Decisive points are defined as "A geographic place, specific key event, critical factor, or function that, when acted upon, allows commanders to gain a marked advantage over an adversary or contribute materially to achieving success." Chairman of the Joint Chiefs of Staff, JP 5-0, *Joint Operation Planning*, GL-8.



surrounding or within half of the 24 AOIs explained in Chapter III. Numerous elements, not by quantity, but by effectiveness, will **support**<sup>253</sup> USSOF VSO elements and the villagers themselves.

Individuals from U.S. and Afghan civilian organizations, such as USGS, USAID, DoS, the Afghan Ministry of Mines and Petroleum and Geological Survey and contractors with knowledge of mining, will directly support the USSOF VSO elements and Afghan villages. This support will be conducted by directly embedding in Afghan villages with USSOF or from secure bases with direct lines of communication to USSOF embedded in the villages. The purpose of support by civilian entities is to fill USSOF's and Afghan villagers' knowledge gaps related to mining and positively influence increased mining efforts. Enablers currently embedded with USSOF VSO elements will remain in support of them.

At national levels, USSOF, the TFBSO and DoS, USAID, USGS and other civilian organizations will employ efforts to influence the Afghan Government, and its numerous entities, to positively reinforce mining and increase their relationships with foreign investors and mining companies. **Critical**<sup>254</sup> to this phase's success are the entities embedded at Afghanistan's national levels and their ability to ensure the natural and mineral resources are purchased from those conducting mining. **Decisive** to this phase's success is USSOF's ability to enable mining at the local levels in Afghanistan. **Success** during Phase I will occur when the majority of USSOF VSO elements are embedded in Afghan villages, supporting local mining efforts and setting conditions for larger mining initiatives. The **desired effects** for Phase I are:

1. USSOF VSO elements receive requests for small-scale mining assistance from Afghan communities.

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<sup>253</sup> This thesis defines supporting or supporting efforts as shaping operations that "...establish conditions for the decisive operation through effects on the enemy, other actors, and the terrain." Headquarters, Department of the Army, *ADRP 3-0, Unified Land Operations*, Glossary 6.

<sup>254</sup> This thesis defines "critical" in terms of a critical requirement, which is defined as "An essential condition, resource, and means for a critical capability to be fully operational." Joint Chiefs of Staff, JP 5-0, *Joint Operation Planning*, GL-8.

2. Afghans begin selling fewer natural and mineral resources to black markets for illegal cross-border trade with the desire to sell them directly to investors.
3. The Afghan government, DoS, USAID, USSOF, USGS and TFBSO receive international inquiries regarding small-scale mining initiatives in Afghanistan and the purchase of natural and mineral resources.
4. USSOF experiences increased access to areas that were previously inaccessible and rich in natural and mineral resources.
5. The Afghan government increases its efforts to complete the Afghan Mining Law, specifically as it relates to the Resource Network Strategy.
6. The amount of HUMINT USSOF receives from Afghans regarding enemy disposition, composition, strength and activities increases due to local desires to conducting uninterrupted mining.

During **Phase II** a consortium of international mining firms (and investors) will support the **decisive effort**: the Afghan government, DoS, USSOCOM, USAID, USGS and TFBSO will implement programs to promote and develop small-scale mining in Afghanistan. The **decisive point** is when consortiums of mining firms (and investors) have initiated programs that directly and indirectly support, promote and develop small-scale mining efforts. USSOF at the village and national levels, USAID, the DoS, TFBSO and USGS will continue **supporting** all mining efforts. At the village level, USSOF VSO elements and their military and civilian enablers will continue to support mining, and employ efforts towards the advancement of rural development, while still advising and assisting the ALP. **Critical** to the success of this phase will be when Afghans conducting small-scale mining see growth in their own monetary, social, and political capital. **Decisive** success will be achieved when small-scale mining efforts are sustainable and increase due to the Afghans' monetary, social, and political gains. Overall **success** during Phase II will occur when consortia of international mining firms (and investors) are supporting and involved with small-scale mining in Afghanistan and the local populations agree to their involvement. The **desired effects** for Phase II are as follows:

1. International mining firms commit human and physical resources at national and local level to support, enable and increase small-mining efforts.

2. USSOF elements observe increases in Afghan community involvement with, and support of, small-scale mining.
3. The amount of Human Intelligence (HUMINT) USSOF receives from Afghans regarding enemy disposition, composition, strength and activities increases due to local desires to conducting uninterrupted mining.
4. Infrastructure and socio-economic development increase at the Afghan village level.
5. Enemy-initiated activities decrease due to mining becoming a higher priority and more lucrative means of survival.
6. Enemy forces reconcile and become miners, or seek employment in the ALP forces.

\*Note: the desired effects from Phase I continue for Phase II.

**Phase III** is aimed at achieving long-term success in Afghanistan as the country experiences increases in its own economic, social and economic independence, and legitimization. This phase will experience improved security conditions and the emerging economies of scope created by a thriving small-scale mining sector, making it possible to initiate large economy-of-scale commercial mining initiatives. The **decisive effort** of this phase will be made by the Afghan government. The Afghan government will continue to promote and support small-scale mining, and enable and support the transition from small- to large-scale mining, and large-scale mining itself. The **decisive point** of this phase is when small- and large-scale mining become the most influential factor in Afghanistan's increases in economic, social and political capital. USSOCOM, USAID, the DoS, USGS and TFBSO will continue **supporting** mining efforts at national levels in Afghanistan.

USSOF VSO elements and their enablers will transition from acting as promoters of mining to advocating for local communities during their dealings with mining firms and the government. **Critical** to the success of this phase is when the majority of Afghans experience economic, social and political benefits that are directly or indirectly related to mining, reinforcing their continued support of mining. **Decisive** to the success of this phase are the Afghans sustaining their own economic, social and political growth with relatively little international dependence. **Success** during this phase will be achieved when the country is able to handle its political, economic, and social situations

with relatively little external assistance. Furthermore, success and the **desired effects** of this phase are directly tied to the overarching goals and objectives of the Resource Network Strategy.

**Risks.** The **strategic** benefits of this strategy far outweigh the tactical and operational risks. **Politically**, this strategy answers the basic question asked by many: “What is the US’s long-term strategy in Afghanistan?” Utilizing USSOF and civilian networks at the local and national levels, the U.S. will promote and help to increase Afghan economic, social, and political capital through mining, starting with the country’s periphery “one village at a time.” When conditions are set, USSOF will transition towards supporting larger-scale mining initiatives and advocate for the Afghans at the village level. **Militarily**, this strategy provides USSOF with a longer-term vision in Afghanistan with a purpose that greatly reinforces and provides a stronger reasoning for their current lines of operation: promoting governance, enhancing security, and developing infrastructure. **Economically**, Afghanistan will leverage its own human and physical resources to develop itself economically, socially and politically, relying on international support much less. Additionally, the U.S. will no longer be required to commit billions of dollars annually and tens of thousands of forces towards its efforts in Afghanistan.

## 1. End-state

This strategy is intended to accomplish the goals and objectives outlined at the beginning of this chapter; and the strategic, or political, military and economic effects addressed in phases I through III. Furthermore, the application of this strategy aligns with USSOCOM’s 2013 Global SOF Network<sup>255</sup> initiative by maintaining a presence and influence in areas less governed in Afghanistan.

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<sup>255</sup> The Commander of USSOCOM, Admiral William H. McRaven, in his posture statement to the 113th Congress House Armed Services Committee on March 6, 2013, stated that he directed “the joint force [USSOF] to capitalize on networks and inter-dependency to maximize effectiveness in deterrence and evolving war” and that he “envision[s] a globally postured Joint Force... that quickly combine[s] capabilities with itself and mission partners across domains, echelons, geographic boundaries, and organizational affiliations.” *Posture Statement of Admiral William H. McRaven, USN Commander, United States Special Operations Command before the 113th Congress House Armed Services Committee*, 113th Cong., 2013, accessed October 7, 2013, <http://docs.house.gov/meetings/AS/AS00/20130306/100394/HHRG-113-AS00-Wstate-McRavenUSNA-20130306.pdf>.

## **2. “Military” End-state**

The insurgency in Afghanistan will be forced to make strategic decisions. Insurgents who seek to disrupt Afghan mining efforts, and the locals’ ability to increase their social, economic and political capital, will very likely be repelled by the Afghans.<sup>256</sup> And, if Afghan locals cannot repel them, insurgent formations or conventional force mobilizations will become easy targets for U.S. airpower. This will restrict the insurgency’s freedom of movement, influence, and ability to control numerous portions of Afghanistan. Members of the insurgency will be naturally given the opportunity to reconcile with the Afghans to increase their own social, economic, and political capital through mining. Friendly forces will have significant leverage over and influence on Afghanistan’s populations through their ability and willingness to support Afghan mining efforts. Additionally, USSOF VSO elements and their enablers will have the definite advantage of information dominance over the insurgents through networking and legitimate access to numerous areas of Afghanistan. The human terrain, the Afghans themselves, will be provided with powerful incentives to govern, secure, and develop their areas and villages due to the political, economic, and social capital gained from mining. Security over the physical terrain will increase. As Afghans’ desire to engage in mining increases, locals will very likely increase their efforts to secure the natural and mineral resource-rich terrain and other areas where mining and its related activities occur.

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<sup>256</sup> Often times military commanders (Army, Marines or ground component commanders) expect to achieve an end-state with regard to the enemy, friendly forces, and the human and physical terrain.

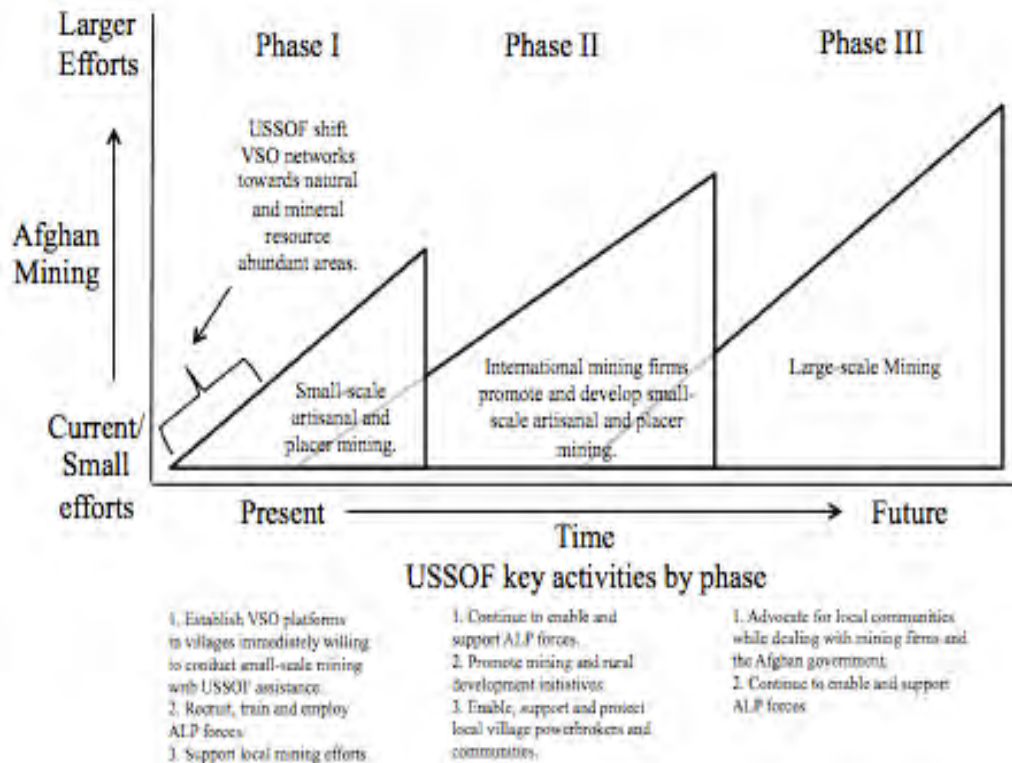


Figure 11. An illustration of the strategic concept for the Resource Network Strategy.

#### D. DETAILS OF STRATEGIC INTERVENTIONS BY PHASE

This section of the Resource Network Strategy amplifies on Phases I through III detailing several essential activities and their related details. The three core and highly influential concepts and principles of networking, economics, and information dominance, remain intertwined throughout these activities. Furthermore, “the devil is in the details,” and this section describes how each phase will be implemented, what is expected to be achieved, and what problems are likely to arise.

##### 1. Phase I

**Phase I** will be initiated by USSOF VSO elements shifting their networks of influence and physical locations to regions of Afghanistan with the greatest potential for natural resource development. These shifts must be suitable, acceptable, and effective in order to promote the success of this strategy. Many activities must occur in order to enable, support and ensure the effective of this strategy’s application in Afghanistan.

Command and control cells of 20-30 personnel will be established to ensure this strategic shift's effectiveness. USSOF-led command and control cells will monitor, synchronize, coordinate, enable and advise these strategic shifts. Each cell must include:

1. A command element, with the cell commander and deputy commander.
2. A "mining team," with one metallurgist, one mining engineer, and three geologists.
3. A "government liaison team," with an economist, lawyer, aid specialist, and diplomat.
4. A "business liaison team," with personnel from the TFBSO and representatives of international mining firms.
5. A "special operations team," with a group of personnel familiar with the planning, programming, and execution of VSO operations.
6. A "development team," with civil affairs personnel and USAID representatives.
7. A resident "scholar" tasked to conduct academic research and assure that invaluable knowledge that could be gained for future use is collected and analyzed throughout the operations.

After command and control cells are established, the most favorable VSO sites must be identified. These sites must be the first locations toward which USSOF will shift. Potential and high-priority sites that USSOF VSO element make their initial shifts toward will be rated on a number of essential criteria:

1. Areas where the local Afghan community supports the establishment of a USSOF VSO element and either accepts its associated ALP units, or is willing to offer ALP recruits for follow-on security duties, must be considered a priority. VSO sites should not be established in opposition to the wishes of the local population.
2. VSO sites must be established in areas where small-scale artisanal mining is either already underway or economically viable.
3. VSO sites must be established where large-scale commercial deposits are present.
4. VSO sites must be established where infrastructure like roads and the power grid are accessible.
5. Preference should be given to potential VSO sites that already host a USSOF VSO element. In practice, no particular site is likely to be ideal in terms of all five criteria, and tradeoffs will have to be made.

In addition, several other factors must be weighed. In areas that already have vibrant small-scale mining sectors, the technical challenges involved in the promotion of the artisanal sector are relatively easy to overcome—a lot of people already know where deposits are and have some skill in mining. On the other hand, such mining is almost invariably illegal, and there is no particular reason to assume that those exploiting a deposit are those with the best claim to it. At such sites, difficult and sensitive negotiations may be required to sort out ownership, avoid getting entangled in local feuds, safeguard the interest of local villagers, and ensure enforcement of Afghan laws. At other candidate sites, there may be no active artisanal mining. This complicates the technical challenges, but mitigates the legal challenges and the potential danger of USSOF VSO elements becoming involved in local feuds.

Another issue relates to security conditions at proposed sites. Some sites are likely to be in relatively secure areas, while others are in regions that are highly contested by insurgents. The former has the attraction of allowing a small force to achieve a lot in terms of promoting mining quickly and with minimal casualties. The latter has the attraction of being an area where insurgents are likely to be profiting from illegal mining. In such areas, USSOF VSO and ALP force deployments in these areas can deny the enemy access to financial resources and reduce their influence on the local Afghan populations. Offsetting that, operations at such sites are likely to be much more difficult—more kinetic resources will have to be provided, the use of civilian mining and aid specialists will be constrained, and higher losses will be sustained by Coalition forces.

Yet another complication is how to handle regions like Aynak, where a Chinese mining firm has established a claim that it has yet to exploit. Politically, it is simply not viable for Coalition forces to appear to be fighting and suffering losses in order to safeguard profits that flow to Chinese firms. As such, I recommend that such areas be ruled out as candidate sites. If, however, the Chinese want to provide security in such areas and make the Afghans' benefits a priority, we should cooperate with their efforts. If the Chinese do not place the interests and benefits of the Afghans as a high priority, the



insurgency (or the Islamic political arm) will very likely strike, making the benefits of Chinese mining not worth their costs, much like what has already occurred while mining at Aynak.<sup>257</sup>

Once the locations of desirable USSOF VSO sites are determined, it will then be necessary to plan and execute the strategic shift of forces. This involves three elements—one that is relatively easy to achieve and two that are potentially very difficult. The easy element is to obtain formal invitations and lay the groundwork for the establishment of new VSO sites. This should be simple because USSOF VSO elements have already done this many times. Thus sites will be in areas where locals would have been notified in advance, and the program to promote artisanal mining will greatly enhance the attractiveness of hosting a VSO site.

More difficult, however, will be the arrangements required to depart existing VSO sites.<sup>258</sup> Such sites should not be simply abandoned. That would put at risk the hard-fought gains that they have made in enhancing security in their regions. It would also blacken the reputation of the VSO/ALP program. Unfortunately, the USSOF VSO elements have little experience with transitioning, or shutting down, VSO/ALP sites. Numerous options are available for USSOF transitioning, as opposed to abandoning, VSO sites that are not in close proximity to heavily mineralized areas:

1. USSOF may completely transition VSO sites to Afghan SOF, which are units similar to the U.S. Army Green Berets, and have operated in Afghanistan for over three years.
2. USSOF may transition VSO sites to Afghan SOF and leave behind small advisory and assistance cells of 4-6 personnel.
3. USSOF transition VSO sites to Afghan SOF and provide them with an appropriate amount of oversight and assistance from other village locations.

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<sup>257</sup> Jessica Donati and Mirwais Harooni, “Exclusive—Chinese Halt at Flagship Mine Imperils Afghan Future,” *Reuters*, September 27, 2012, accessed October 7, 2013, <http://uk.reuters.com/article/2012/09/27/uk-afghanistan-aynak-idUKBRE88Q0XL20120927>.

<sup>258</sup> In September 2012, 36 of 99 (or 37 percent) VSO/ALP sites were located farther than 60 kilometers away from one of the USGS’s AOIs or areas with high potential for natural and mineral resources. The remaining 63 percent of VSO/ALP sites were located either within 60 kilometers of or inside of one of the USGS’s AOIs or other areas with high potential for natural and minerals resources.

4. USSOF conduct VSO in one village while living in another village, spending 50 percent of their time in each village.
5. USSOF establish mobile advisory teams that move from village to village conducting VSO for two to four days at a time. These teams would be assigned to a single Afghan province or half of a province to maintain continuity, familiarity with the area, and rapport with the locals.

USSOF VSO teams, while operating within any one of the aforementioned conditions, may offer the benefit of employment and increased social, economic and political capital through mining for sites where they had previously conducted VSO as a point of leverage to maintain rapport with, and access to, the village.

Another difficult task will be to influence the Afghan government in order to gain approvals and commitments of support for efforts being planned at different sites. USSOF and DoS personnel located in Kabul must immediately initiate efforts to influence Afghan President Karzai and key leaders to support USSOF VSO teams transitioning to areas with abundant natural and mineral resources. Additionally, the Afghan government must be offered some type of benefit to allow this strategic shift of USSOF VSO elements.

In addition to a strategic shift of the USSOF VSO network, it will be necessary to rethink the current VSO/ALP approach. The new VSO/ALP “package” will still follow the proven methodology currently in place—following an invitation, a team made up of USSOF assets and enablers will embed in a village; establish a physical VSO site; recruit, train and employ a local ALP security force; promote effective governance; and engage in associated efforts to develop a good working relationship with local communities.

USSOF VSO elements, however, will have a very different composition and “feel” than they currently have. USSOF will remain in the lead element at the VSO sites because physical security will always be the prerequisite for all other planned activities, but while USSOF continue to lead, the VSO elements will incorporate personnel from Civil Affairs and the TFBSO, DoD civilians, USAID development personnel, USGS geologists, and also select Afghan military and civilian personnel.

This new format will require a change in the operational culture that surrounds the VSO program. To facilitate that change, I propose a number of steps.

1. Rename the VSO teams “CMETs” (Civil-Military Enabling Teams). This will help reinforce the image of the teams as being a non-kinetic force whose primary task is the enabling of mining and economic development. “CMET” sounds a lot less “kinetic” than Special Forces Operational Detachment—Alpha (SFODA), Marine Special Operations Team (MSOT), or SEAL platoon.

While this change of image will enhance the attractiveness of the teams in Afghan eyes, it will first and foremost help USSOF personnel to understand that the success of the mission they are undertaking will not be measured by the number of insurgents killed, but by the amount of economic and social progress made. (From this point of the thesis, and forward, the combined USSOF-led teams will be referred to as CMETs.)

2. Modify the CMET’s appearance. CMET uniforms should change to (where appropriate) either Afghan or U.S. civilian attire. The visibility of rank and insignia should be much less obvious, i.e. Special Forces, Ranger and Airborne patches, and baseball hats with skulls and crossbones should not be worn. Weaponry should be made to appear as civilian and non-kinetic as is feasible, which may mean keeping the M240B and M2 (.50 caliber) machine guns, M249 SAWs (Squad Automatic Weapons) and 40mm grenade launchers out of site as appropriate. However, radios must be maintained within close proximity for situations when USSOF’s “lightly armed” appearance draws attacks and U.S. airpower must be summoned to ensure that all Afghans have a clear understanding that VSO elements have a significant amount of “reachback.”
3. All military personnel assigned to CMETs should be required to complete a short one or two week course that exposes them to geology, natural resource economics, and village level development. This will help them understand what we are trying to do with the CMET program, and how they fit into it.

While CMETs conduct their strategic shift, the command cell—with high level assistance from NATO government—will recruit major “world class” mining firms to join a consortium that will promote and supervise artisanal mining efforts. Criteria for inclusion in the consortium would include experience with both marquee mining projects and in the problems of artisanal mining activities, a strong environmental track record, a good reputation in terms of corruption, and incorporation in a country that belongs or works closely with the Coalition. Candidate firms would include BHP Billiton, Rio Tinto, Vendanta, Anglo-American, Vale, Barrick, and Newmont. Although they are huge, these firms know all about artisanal mining. For example, in Ghana, Newmont has established “a linkage programme around the Ahafo mine in order to maximize to

business opportunities for local SMMEs (Small, Medium and Micro Enterprises) as well as more broadly to seek means to increase local incomes.”<sup>259</sup> And, Aglo American and its subsidiary, Anglo Gold, have been involved with small-scale artisanal mining and their communities in Ghana since the early 1980s.<sup>260</sup>

These firms would form an entity that would provide technical assistance and capital to artisanal miners, training and internships to potential mining personnel, and assistance in the establishment of processing and logistics facilities. While the effort may or may not be directly profitable to these firms, the sums involved would be trivial for them as a group. Offsetting this, these firms would earn a lot of good public relations and international goodwill, while strengthening both their understanding of Afghanistan—and hence their ability to judge the viability of the future large-scale projects—and their experience in working with Afghans and the Afghan government.

Bringing these firms on board achieves three things. First, the U.S. military and the Coalition do not have to become directly involved in mining. This makes the mission easier to accomplish. Second, these firms will do a far better job of promoting artisanal mining—they have the required experience. Third and, perhaps, most important, the entry of these firms into Afghanistan is a long-term strategic goal of the Afghan government, and if the Ministry of Mines and Ministry of Finance see involvement by marquee international mining firms in the Resource Network Strategy, they are far more likely to support the overall effort.<sup>261</sup>

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<sup>259</sup> C. M. Rogerson, “Mining Enterprise and Partnership for Socio-economic Development,” *African Journal of Business Management*, 4, 14 (July 18, 2011): 5413, accessed October 11, 2013, <http://academicjournals.org/AJBM>.

<sup>260</sup> Alan Roe and Jonathan Samuel, “Ghana, Country Case Study: The Challenge of Mineral Wealth: Using Resource Endowments to Foster Sustainable Development,” July 2007, International Council on Mining & Metals, accessed October 12, 2013, <http://www.icmm.com/document/301>.

<sup>261</sup> Tarek Ghani, September 17, 2013, comment on this thesis to Dr. Jonathan Lipow, an advisor for this thesis. UC Berkeley, CA. Tarek Ghani is a Ph.D. candidate in Business and Public Policy at UC Berkeley’s Haas School of Business, a native Afghan, and the son of Ashraf Ghani. Ashraf Ghani was the former chancellor of Kabul University, worked for the World Bank on international development and assistance, and was Afghanistan’s Minister of Finance from 2002 through 2004. Ashraf Ghani is the current Chairman for the Institute for State Effectiveness, which was established in Afghanistan in 2005 to improve states’ ability to serve their citizens.

## **2. Phase II**

During Phase II a consortium of international mining firms (and investors) will have been established and the CMETs have shifted their networks of influence and established a secure environment, Phase II—the promotion of artisanal mining—will commence. Civilian employees drawn from the mining consortium will embed with the CMETs and begin providing technical assistance, credit, training, and market access services to local artisanal miners. To establish a visual feel for the type of activity, see Figure 12.



Figure 12. The top left picture is an example of artisanal mining in Mes Aynak, Logar Province Afghanistan. The top right picture illustrates an Afghan coal miner's hands in Karkar Province, Afghanistan. The bottom left picture illustrates "illegal" artisanal mining in Afghanistan. The bottom right picture illustrates an Afghan man using dynamite, an old and unsophisticated mining technique.<sup>262</sup>

While the private sector becomes involved in mining, the CMETs—while continuing to provide security and train ALP forces—will also expand their efforts to

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<sup>262</sup> The top left picture was illustrated by Brent Huffman on May 17, 2012, "Are Chinese Miners Destroying a 2,000-Year-Old Buddhist Site in Afghanistan?," *Asia Society* (blog), August 28, 2013, <http://asiasociety.org/blog/asia/are-chinese-miners-destroying-2000-year-old-buddhist-site-afghanistan-images>; the top right pictures was illustrated in Cheryl Benard, "Afghanistan's Mineral Wealth Could Be a Bonanza-or Lead to Disaster," *The Daily Beast*, July 4, 2012, [TheDailyBeast.com](http://www.thedailybeast.com/articles/2012/07/04/afghanistan-s-mineral-wealth-could-be-a-bonanza-or-lead-to-disaster.html), accessed on August 28, 2013, <http://www.thedailybeast.com/articles/2012/07/04/afghanistan-s-mineral-wealth-could-be-a-bonanza-or-lead-to-disaster.html>; the bottom left picture was illustrated by in a RAWA News article, "Afghan 'Geological Reserves Worth a Trillion Dollars.' The War-ravaged Nation Could Become One of the Richest in the World if Helped to Tap its Geological Deposits, Karzai Told Reporters," *Rawa News*, accessed August 28, 2013, <http://www.rawa.org/temp/runews/2010/01/31/afghan-geological-reserves-worth-a-trillion-dollars.html>; the bottom right picture was illustrated in Soraya Sarhaddi Nelson, "Tapping into Afghanistan's Wealth of Gems," *NPR*, September 7, 2007, accessed on August 28, 2013, <http://www.npr.org/templates/story/story.php?storyId=14239357>.

promote local development and create a positive environment for cooperation between villagers, the Afghan government, and international mining firms. I propose a number of initiatives:

Electronic Financial Payments (EFT). All residents will be provided a biometric smart card that will be used as a means of distributing the revenues generated by the mining operation via EFT. The smart cards will allow villagers to make purchases and sales via smart card at their local markets and can be used to pay mine workers, suppliers and—potentially—ALP personnel. The smart cards will eventually be enabled to allow villagers to make purchases using them in major population centers, or at a minimum, withdraw cash from bank branches. A basket of financial services will be offered to holders of smart cards, including micro-credit, micro-insurance, and savings vehicles. The smart cards will also serve as ID cards, and will also be able to store additional data for other applications, such as health care and security.

The introduction of biometric EFT will lower transaction costs for villagers, increasing their effective living standards and market integration. It will provide access to new types of financial goods that enhance welfare. It will eliminate the need for cash transfers and the resultant corruption and security problems. It will provide an electronic “window” into the workings of the village that can be valuable to the CMET team. It will also lay the groundwork for greater economic integration at the national level.

The system I suggest be considered is the Universal Electronic Payment Systems (UEPS) currently used primarily in South Africa, Ghana, and Iraq.<sup>263</sup> This system is proven, and while compatible with the mobile telephone based systems that are now quite

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<sup>263</sup> Elly Okutoyi, “Zimbabwe Unveils Country’s First Universal Electronic Payment System,” Humanipo: Home to African Tech, May 25, 2013, accessed August 25, 2013, <http://www.humanipo.com/news/484/Zimbabwe-unveils-countrys-first-universal-electronic-payment-system>; Ross J. Anderson, “The Formal Verification of a Payment System” (unpublished manuscript, Computer Laboratory: Cambridge, UK, 2006), accessed on September 9, 2013, <http://www.cl.cam.ac.uk/~rja14/Papers/uepsbook.pdf>; “South African Supreme Court of Appeal Rules in Favor of SASSA and Net1,” *Marketwire*, March 27, 2013, accessed September 10, 2013, <http://www.marketwire.com/press-release/south-african-supreme-court-of-appeal-rules-in-favor-of-sassa-and-net1-nasdaq-ueps-1772619.htm>; “Smart Card Payment System Launched in Iraq,” Omni-channel Retailing, accessed September 10, 2013, [http://omni-channelretailing.com/item.php?news\\_id=6436](http://omni-channelretailing.com/item.php?news_id=6436).

popular, it can also operate in areas where there is no connectivity, cellular service, or even access to the power grid. The system is shown in Figure 13.

Most importantly, the UEPS system has incorporated many measures that make it highly secure. For example, UEPS cardholders can confirm their identity with a fingerprint from any of their fingers. The card owner, however, chooses one finger to be a distress finger (only known by him/her), and if he is forced to make a transaction with his smart-card while in distress, or against his will, the card reader will show that the user's balance is very insignificant, or that funds are not available, while alerting authorities as soon as possible that the card holder is in trouble. Additionally, card readers will not work if the person is dead or the finger has been detached from their body.





Figure 13. A UEPS Terminal and Cards.<sup>264</sup>

USAID is ideally suited to be the lead agency in the promotion of EFT. The effort would fit into the Agency’s “Better than Cash Alliance” initiative, a USAID organized collaborative effort of non-profits and firms like Citibank and VISA that works to promote EFT in developing countries.

### 3. Connectivity

VSO elements currently bring a satellite broadband capability with them. So would CMETs. I propose that this capability be leveraged by offering villagers access to broadband through the establishment of “internet cafes” that piggyback on the VSO element’s capability. A website will be established for the village in order to share news, discuss problems and opportunities, and provide the CMET team with an additional electronic window into the workings of the village (see Figure 14).

<sup>264</sup> “Banking,” Net 1 Mobile Solutions, accessed September 10, 2013, <http://www.net1mobile.co.za/banking.aspx>.



Figure 14. An example of an Afghan Village Website.

Distance learning opportunities could also be exploited in order to facilitate certificate training courses that will be required for those involved in mining activities. Indeed, there is no reason why distance learning should not be harnessed to facilitate ALP training as well.

Establish 4G Cellular Networks. In areas currently lacking 4G service, the CMET would work to establish such service, and issue smart phones to the local population. These phones will greatly aid in facilitating mining activity. They also enhance local security in a number of novel ways. First, Afghan villagers can use them to capture images of insurgent or criminal activity in their villages. Second, the phones provide a geo-location capability that would allow the CMET to monitor the location of the local population and identify people in distress or need of assistance. Third, they once again enhance the CMET's electronic window, or Signals Intelligence (SIGINT), into the village in which it is embedded.

#### **4. Phase III**

**Phase III.** Once (i) security is firmly established in areas with major resource endowments, and the Afghan locals are primarily responsible for and capable of maintaining it; (ii) a thriving artisanal mining sector has developed; and (iii) international mining firms have developed a good level of understanding of the opportunities and challenges of working in Afghanistan, it will be possible to commence Phase III of the Resource Network Strategy. In Phase III, the Afghan Ministry of Mines will begin to aggressively issue tenders for various small- and large-scale mining projects (see Figure 15 for examples).



Figure 15. The top left picture illustrates a small-scale mining project in Bamyan Province, Afghanistan. The top right picture illustrates a small-scale mining activity in Afghanistan. The bottom left picture illustrates Afghans mining at the Abkhorak mine in northern Afghanistan. The bottom right picture illustrates gold mining at Nooraba/Samti in north Afghanistan on the Panj River.<sup>265</sup>

<sup>265</sup> The top left picture is of a small-scale mining project in Bamyan Province, Afghanistan provided by Graham Bowley, "Potential for a Mining Boom Splits Factions in Afghanistan," *New York Times* [Asia Pacific], September 8, 2012, accessed October 13, 2008, [http://www.nytimes.com/2012/09/09/world/asia/afghans-wary-as-efforts-pick-up-to-tap-mineral-riches.html?pagewanted=all&\\_r=1&](http://www.nytimes.com/2012/09/09/world/asia/afghans-wary-as-efforts-pick-up-to-tap-mineral-riches.html?pagewanted=all&_r=1&). The top right pictures is an illustration of small-scale mining activity in Afghanistan provided by Dion Nissenbaum, "Afghan Mining Wealth Thwarted by Delays," *Wall Street Journal*, June 14, 2012, accessed October 13, 2008, <http://www.theaustralian.com.au/business/wall-street-journal/afghanistan-mining-wealth-thwarted-by-delays/story-fnay3ubk-1226395155692#>. The bottom left picture is an illustration of Afghans working the Abkhorak mine in northern Afghanistan provided by Ali M. Latifi, "Afghan Mines among the World's Most Dangerous. Afghanistan has a Huge Mineral Deposit, but the Underground Wealth is Unlikely to Enrich Vulnerable Workers," *Aljazeera: In Depth*, September 15, 2013, accessed October 13, 2013, <http://www.aljazeera.com/indepth/features/2013/09/201391515580675531.html>. The bottom right picture is an illustration of gold mining at Nooraba/Samti in north Afghanistan on the Panj River provided by System for Monitoring Law Enforcement of Informal Mining [SYMIN], "Service Trials: Gold Mining," accessed October 13, 2013, <http://www3.gaf.de/symin/service-trials>.

At the CMET level, three things will take place during Phase III. First, the international mining firms will phase out their assistance to the artisanal mining sector, as they transition towards involvement in large-scale projects. While the artisanal sector should be more or less self-sustaining by this time, it is possible that certain gaps may need to be filled by the CMETs on an ad hoc basis.

Second, CMETs will transition from being promoters of mining activity to acting as defenders of local interests in dealings with the international mining firms and the Afghan central government. This will mitigate the risk that the advent of commercial mining, rather than uniting Afghanistan, will instead drive local communities to engage in insurgency in order to defend their region from rapacious mining activity.

Finally, as major mining projects get under way, CMETs will begin to withdraw. In some areas, it may be possible to simply shut down sites. In other areas, the site may be fully civilianized and taken over by aid workers. In many areas, however, a military presence will still be required, and the role played by the SOF will gradually be transitioned to select Afghan National Army personnel trained specifically for the Resource Network Strategy mission. At that point, the Coalition will have won the war in Afghanistan.

## **E. CONCLUSION**

Revenue from commercial mining projects will allow the Afghans to end their reliance on foreign aid, will begin to promote genuine industrial socioeconomic development, and will engender economic conditions at the national level that will undermine any remaining pockets of insurgency remaining in the country.<sup>266</sup>

The tactics and skills developed in implementing the Resource Network Strategy will, however, still remain relevant to U.S. national security. For example, the effort in Afghanistan could act as a template for a similar effort to secure the resource rich frontier areas of Pakistan. Indeed, at some stage, the Pakistanis should be invited to join in the Afghanistan effort in order to develop the experience required to make the approach work

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<sup>266</sup> Peter Berck and Jonathan Lipow. "Did Monetary Forces Help Turn the Tide in Iraq?" *Defense & Security Analysis* 26, no. 2 (July 2010).

in their country. Securing the Northwest Frontier Province and the FATA would constitute a decisive victory in the Global War on Terror whose importance may transcend that of any achievements made in Afghanistan. Finally, the approach developed in Afghanistan may be applicable farther afield. Perhaps U.S. and NATO forces experienced in the implementation of the Resource Network Strategy could team up with, for example, the African Union's peace keeping forces to secure the Democratic Republic of Congo and other resource rich areas that are plagued by insurgency and criminal activity.

## **VI. CONCLUSION AND SUMMARY OF RECOMMENDATIONS**

Since the United States entered Afghanistan following the attacks of 9/11, America and its allies have expended a significant amount of blood, treasure, and time in an attempt to stabilize this troubled land. After 12 long and painful years, however, it is difficult to identify any lasting achievements that can be associated with this effort. Many observers believe that the Taliban's return to power is imminent. There are reports that thousands of Afghans are leaving areas no longer under NATO military control. Thousands of American troops deployed to Afghanistan continue to achieve hard fought tactical victories and only occasionally experience operational successes, but fail to alter the course of the war. Given the stakes involved—America's reputation, NATO's sense of confidence, Pakistan's internal stability—a new long-term vision (and associated strategy) of Afghanistan's future and America's role in it is required.

In this thesis, I explored the possibility of introducing a new counterinsurgency and nation-building strategy—the “Resource Network Strategy”—that leverages Afghanistan's natural resource endowment and the USSOF's village stability operations (VSO) networks, methodologies, and capabilities in order to secure Afghanistan and promote a virtuous circle of long term economic and political development with a minimal commitment of American lives and money. At its core, this strategy focuses on each Afghan as a rational individual, and seeks to offer that individual an alternative that will provide greater benefits than can be gained by passively or actively supporting the Taliban insurgency.

The starting point in my analysis was to ask what the United States is actually trying to achieve in Afghanistan. In Chapter V, I offered a set of goals that that I believe represent a reasonable—if optimistic—set of objectives that, if achieved, would result in the campaign in Afghanistan being recognized by friend and foe alike as an unambiguous victory. The goals were:

1. Afghanistan poses no terrorist or insurgent threat to any other country.
2. Afghanistan is not faced with any meaningful internal security threat.
3. Afghanistan safeguards group rights for all of its communities.

4. Afghanistan safeguards the individual rights for all of its citizens in a manner consistent with the spirit of the United Nation's Universal Declaration of Human Rights.
5. The economic and social dynamic in Afghanistan assures the long-term sustainability of the achievements outlined above.
6. Foreign military intervention is not required to maintain the status quo.

This Resource Network Strategy was designed to offer decision makers a sound strategic concept that could realistically offer NATO and the Afghan government an opportunity to make considerable progress towards these six goals. This strategy's objectives are to:

1. Deny insurgents access to revenue currently being earned from illegal mining.
2. Create significant and sustainable economic incentives for local regions that cooperate with Coalition forces and assist in defeating insurgents in their area.
3. Physically secure high value mining areas.
4. Promote the small-scale artisanal mining industry.
5. Increase awareness and understanding in the international mining industry regarding opportunities in Afghanistan.
6. Promote economic interdependence and integration between different Afghan communities, and between communities and the central government of Afghanistan.

How will the Resource Network Strategy achieve these objectives? The strategy is divided into three overlapping phases. In Phase I, the USSOF will shift its networks of VSO influence and locations into areas endowed with considerable natural resources. The VSO methodology incorporates: (i) recruiting, training and advising thousands of "home-grown" security forces, which are today referred to as ALP; (ii) promotion and support of local governance; and (iii) development of local infrastructure. The success of VSO sites depends on the support of the local population, and these sites are only established if there is a good chance that such support will be forthcoming. What the Resource Network Strategy adds to the existing VSO approach is the ability to offer local populations that host VSO sites the opportunity to exploit natural resources in their area that will greatly enhance their wealth, and do so in a sustainable fashion.



Following the establishment of security at each new VSO site, Phase II of the Resource Network Strategy will commence. In Phase II, a consortium of international mining firms and internationally recognized NGOs will—with assistance from Afghan and American government entities (USAID, USGS, TFBSO, Afghanistan Ministry of Mines, etc.) will implement a program to promote the establishment of a safe and environmentally responsible small-scale artisanal mining industry in Afghanistan. This will raise local living standards and strengthen local institutions. At the same time, the experience gained through small-scale efforts will have paved the way for larger industrial scale mining projects. Once such projects become economically feasible, Phase III will commence.

In Phase III, the Afghan government will issue tenders for large-scale industrial mining projects in areas that have been secured and developed during Phases I and II. At this point, the VSO forces and the NGOs involved in promotion of artisanal mining will transition from being promoters of mining to being advocates of local interests, assuring that development of marque mines does not engender hostility that rekindles insurgency.

Based on the USGS's 2011 report on Afghanistan's mineral endowments, I identified 24 areas of interest where the USGS had validated and identified the locations, types and estimated amounts of natural and mineral resources for production opportunities in Afghanistan. These areas are spread relatively evenly throughout the country. Several of these areas are in close proximity current VSO sites, have ALP currently operating within close proximity to them, and their security levels offer low- to medium-risk, making these areas logical places to start implementation of the Resource Network Strategy.

Based on the projected requirement to secure all 24 areas of interest, the Resource Network Strategy assumes that the current USSOF deployment in Afghanistan—currently capable of manning and supporting 100 VSO sites will remain in-theatre following NATO withdrawal at the end of 2014. In addition, I calculated that an additional cell would have to be established at Special Operations—Afghanistan headquarters in Kabul to support the Resource Network Strategy. This cell would require

20–30 personnel, and would coordinate USSOF efforts with those of the Afghan government, other American agencies such as USAID and the TFBSO, NGOs, and mining firms involved in the initiative.

In addition to changes in the location of VSO deployments, implementation of the Resource Network Strategy requires several changes in how VSO operations are conducted. First, attention has to be paid to re-orienting USSOF's understanding of its mission, as well as the image that it projects to the Afghans. Special Operations personnel need to understand that their ultimate objective is to promote development in the region in which they operate—not engage in kinetic operations. This requires some training and rebranding. VSO personnel will need some training in mining and village level development economics. The appearance of VSO teams should be civilianized (and “Afghanistanized”). The VSO teams should also be renamed. I propose calling these teams “CMETs” (Civil-military Enabling Teams), which will likely be perceived as much less offensive and “war-like.”

Second, successful implementation of the Resource Network Strategy requires communications and financial infrastructure that VSO teams must provide. These include mobile phone and internet access (via the VSO site's broadband link), and the establishment of electronic financial payments systems to assure that the many financial transactions that the strategy will engender are done with maximum transparency and efficiency. This electronic infrastructure also opens new opportunities for the effective conduct of the VSO's security mission. These opportunities should be exploited. Cellular phone usage should be tracked and monitored for intelligence purposes. Financial transaction records should be monitored to identify suspicious activity. Internet usage should be monitored to identify who is accessing what websites. Using this information, VSO teams can develop a much clearer situational awareness regarding developments in their areas of responsibility. This should allow USSOF to resolve potential issues before they become dangerous problems.

This briefly summarizes the proposed strategy. In Chapter V, the full strategy was articulated following the guidelines of Joint Publication 5-0 (JP 5-0), *Joint Operation Planning*. In accordance with JP 5-0, this strategy establishes and defines decisive

points, decisive and supporting efforts, critical requirements, success, desired effects, political, military and economic risks, and desired end-states. Defining these terms, concepts and conditions in the context of this strategy establishes priorities for its deliberate and well-planned preparation and execution.

In addition to the Resource Network Strategy itself, I gave considerable thought to some of the political and operational challenges and opportunities that would or could accompany its implementation. Some of these insights were motivated by my own counterinsurgency operations experiences. The following summarize the ideas I developed in the thesis:

1. This Resource Network Strategy must be announced by senior U.S. officials, preferably, the President of the United States. This will ensure the world understands that America is serious about achieving victory during the way forward in Afghanistan, and does not plan to let all the human and financial resources invested in the country, end in failure.
2. USSOF must immediately focus a shift of their VSO teams, networks, and methodologies towards areas where this strategy is currently feasible. Afghans living near the Ghunday-Achin (#18)<sup>267</sup> and Nuristan (#22) AOIs are conducting mining and want USSOF support for their mining activities (discussed in Chapter I), and USSOF must shift towards these areas. Other areas where mining is highly feasible, and USSOF must make their immediate shifts towards are the Badakshan (#2) AOI, which has low-level threats to security and well over 300 ALP; the Northern Takhar (#11) AOI, which has low-level threats to security and well over 1,100 ALP; the (southern) Takhar (#24) AOI, which has low-level risks to security and well over 100 ALP; the Dushar-Shaida-Misgaran (#5) AOI, which has medium-level risks to security and well over 200 ALP; the North Herat (#21) AOI, which has medium-level risks to security and well over 200 ALP; the Touramaline (#13) AOI, which has medium-level risks to security and over 100 ALP; the Kharnak-Kanjar (#8) AOI, which has medium-level risks to security and well over 200 ALP; and the Nalbandon (#10) AOI, which has medium-level risks to security and over 100 ALP. All of these AOIs have roads leading to and from them, the locals are either mining now or have some understanding of mining; and there is a significant endowment of natural and mineral resources.
3. This is not a “get rich quick” tactical or operational level plan. This is a long-term vision and effects-based strategy for an entire country, and must be conducted this way. Much like the Marshal Plan after World War II,

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<sup>267</sup> The AOI numbers addressed correspond with AOIs 1-24 illustrated in Figure 2, Chapter 1.

this plan will take years to see the effects of at the national level. Afghans should not expect to immediately earn vast fortunes from mining. Those implementing and involved in this strategy will require patience, keeping this strategy's vision in their forethoughts.

4. The Afghans must know that the United States is not planning a complete withdrawal from the country. They must know that USSOF and their civilian counterparts are in this one for the "long haul," which will send a message to the insurgents and terrorist organizations that Afghanistan is no longer their best option for acquiring unhindered safe haven.
5. The Afghans (at all levels) must understand that USSOF and their civilian counterparts will enable and promote mining, advocate for villages and the country when trading their natural and minerals resources with internal and external buyers, and set conditions for fair and equitable distribution of mining-related financial gains.
6. The strategy addresses corruption by equalizing all stakeholders involved. Conversely, everyone involved in the implementation of this strategy must accept some degree of corruption and not expect an entire country to change overnight.
7. Those who implement this strategy must be chosen for their appropriate knowledge, capabilities, access to resources and people, and personalities. This means that the individuals and organizations implementing this strategy could potentially not align with any particular USSOF unit or civilian organization.
8. Entire USSOF teams conducting VSO in Afghanistan should not be relieved in place or conduct transfer of authorities (also called a "RIPTOA") at one time. No matter what "systems" are in place, "RIPTOAs" have been a problem when entire USSOF teams have replaced one another in Afghanistan. A great deal of continuity has been lost when highly experienced USSOF teams and their leadership depart Afghanistan all at once. USSOF team leadership (the Officer, Warrant Officer, Senior Noncommissioned Officer, and Intelligence Sergeant) and the subordinate team members located at an individual VSO site should not all be replaced at one time. Only 50 percent of USSOF team's leadership and its subordinates should be replaced during a relief in place or transfer of authority ("RIPTOA"), which will maintain continuous continuity, experience, and knowledge in the country.
9. The U.S.'s involvement in Afghanistan must go from the "front page" of newspapers and media outlets to the back page. Terrorists and insurgents appreciate little more than achieving the "money shot" (pictures and video) of an American making a mistake. If the United States' involvement in Afghanistan is less public, then these "money shots" could likely receive less attention and scrutiny.

10. American forces –both military and civilian - must maintain the ability to defend themselves by acquiring and employing air power (close air support) and employing their organic firepower. USSOF, their civilian counterparts, and the Afghan locals will experience insurgent attacks, and must maintain the ability to defend themselves.
11. USSOF-advised and Afghan-commando-led clearing and disruption operations must be discontinued, or at least be kept separate from efforts related to the Resource Network Strategy. Surgical raids that pinpoint individuals and small area targets can be continued. These types of surgical operations have proven highly effective, and are of great benefit strategically as they not only eliminate insurgent leaders, but also send a meaningful message to the insurgents and terrorists.
12. Training must occur before USSOF teams and civilians combine their efforts to enable mining in Afghanistan. One to two week training courses must be established and required for all parties involved, which include, but are not limited to: the basics of mining operations, equipment familiarization, drilling, blasting, excavating, mineral identification, testing, and processing; familiarization of USSOF tactics, techniques, and procedures for shooting, maneuvering, communicating, and providing first aid, and the appropriate equipment involved; and, an overview of this Resource Network Strategy to ensure its clear understanding.
13. The Status of Forces Agreement currently being negotiated must be aligned to protect those implementing this strategy. USSOF and their civilian enablers must be ensured legal protection by the United States if situations arise where they face any type of due process related to actions Afghanistan. Additionally, when necessary, they must maintain the ability to defend themselves.
14. The United States' involvement must no longer be referred to as a "war." This terminology sends a message to the insurgents, terrorists, the Afghans and world that there is opportunity for conflict in the country. Similar to when Operation Iraqi Freedom was renamed Operation New Dawn, Operation Enduring Freedom Afghanistan must either be renamed, or not named at all. Perception is reality and the United States must influence the perceptions of foreign involvement in Afghanistan.
15. Training events must occur between Afghan Security Forces and the United States military. Aside from the fact that both parties will benefit from each other's training, continued access to resources and networks can be developed in Afghanistan, and the Afghan government and military will maintain and increase its legitimacy through continuous involvement with the United States government.

16. Afghan Special Forces<sup>268</sup> (ASF) must be integrated into the CMETs (USSOF and their civilian enablers) at the village level as often and as soon as possible. This integration will lead to several positive results, such as: ASF will receive real-world VSO training and experience, an Afghan face will be tied to every CMET action, and in the future VSO sites can be completely transitioned to ASF teams.
17. The United States could gain influence with Pakistan through this strategy. Natural and mineral resources are being sold to black markets, which lead into Pakistan. It is likely that many locals living along the Afghan-Pakistan border regions heavily depend upon them. Afghanistan's natural and mineral resources can be used as a point of leverage to gain cooperation from Pakistan and its lawless regions. Furthermore, by leveraging the natural and minerals resources that exist throughout the border region, more oversight can be established in these areas. If the people living in these regions think they'll get paid more money for their natural and mineral resources by selling them to official investors, they'll likely stop selling them on the black markets and increase their acknowledgement of law and order.
18. Americans will make mistakes while implementing this plan, it's human nature. Those who do so must be held accountable, or at a minimum, directed to depart Afghanistan and no longer be a part of this strategy. The Afghans do not forget foreigner's mistakes, no matter how they're assessed by people other than themselves.
19. This Resource Network Strategy has two watchwords, networks and benefits. Fewer people on the ground—with ties to vast networks and offering actual benefits to locals—will be more effective than military units holed up in large outposts and forward operation bases. These, often conventional units, typically only have sporadic access to the locals and offer very few lasting benefits to them.

Finally, American service members having already been deployed or preparing to deploy to Afghanistan, their families, and taxpayers deserve a reason and purpose for supporting the situation there. Strategic and long-term success in most wars become a contest of thought, and American involvement during the way forward in Afghanistan must become a part of this contest. The United States cannot keep spending its human and financial resources, suffering continued losses in credibility, without enjoying some kind of lasting strategic benefits. United States Special Operations Forces are low-cost assets, and have the motivation, capabilities, and experience to mount and sustain a

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<sup>268</sup> Afghan Special Forces (ASF) are trained by, and designed to be similar to, the U.S. Army "Green Berets."

winning strategy in Afghanistan. To date, the idea of a Resource Network Strategy has yet to be trumped by a more suitable and sustainable strategy that seeks to achieve positive and long-lasting effects in Afghanistan. The Resource Network Strategy deserves a chance, and its implementation may put the hearts and minds of many at ease as Afghanistan's future unfolds.

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## APPENDIX      THE COMMERCIAL AND INDUSTRIAL USES OF AFGHANISTAN'S NATURAL AND MINERAL RESOURCES.

1. Asbestos is a component of roofing products, heat-resistant gaskets, and friction and fire resistant materials.<sup>269</sup>
2. Barite is most commonly used as a weighting agent while drilling in high-density muds; also as a paint pigment and a weighted filler for paper (i.e. playing cards), cloth, and rubbers (i.e., “anti-sail” mudflaps for trucks); and in a wide variety of compounds used during radiation shielding and detection during x-ray processes at hospitals, power plants, and laboratories.<sup>270</sup>
3. Bauxite is the principle ore of aluminum and commonly used with other materials for sandblasting, and as an abrasive material in products such as sandpaper, and polishing powders and suspensions. Bauxite is also used as a propellant in drilling operations, keeping fractures in reservoir rocks open while pumping high-pressure oil and natural gases through them.<sup>271</sup>
4. Carbonatite often contains a number of REEs and minerals such as niobium, tantalum, copper, iron, and fluorine.<sup>272</sup>
5. Celestite is primarily used for the production of strontium carbonate and other strontium compounds. Strontium compounds are found in television picture tubes and computer monitors due to their ability to absorb X-rays and improve the brilliance of glass. Strontium is also used producing ceramics magnets; and fireworks, marine flares, and tracer ammunition due to it producing a brilliant red flame while burning.<sup>273</sup>
6. Chalcopyrite is most commonly used independently or with other minerals as semiconductors, and as components of nonlinear optical (photo-voltaic) devices, detectors, and solid-state lighting applications.<sup>274</sup>

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<sup>269</sup> “Asbestos in a Nutshell,” About.com, accessed November 7, 2013, <http://geology.about.com/od/nutshells/a/asbestosnuts.htm>.

<sup>270</sup> “Barite,” accessed November 15, 2013, <http://geology.com/minerals/barite.shtml>.

<sup>271</sup> “Bauxite,” accessed November 15, 2013, <http://geology.com/minerals/bauxite.shtml>.

<sup>272</sup> British Columbia, “N—Carbonatites,” accessed November 7, 2013, <http://www.empr.gov.bc.ca/Mining/Geoscience/MineralDepositProfiles/ListbyDepositGroup/Pages/NCarbonatites.aspx>.

<sup>273</sup> Department of Manufacturing, Government of Australia, “Innovation, Trade, Resources and Energy, DMITRE Minerals,” accessed November 7, 2013, [http://www.minerals.dmitre.sa.gov.au/geological\\_survey\\_of\\_sa/commodities/celestite](http://www.minerals.dmitre.sa.gov.au/geological_survey_of_sa/commodities/celestite).

<sup>274</sup> Bijayalaxmi Panda, “Structural and Electronic Properties of Chalcopyrite Semiconductors” (PhD diss., National Institute of Technology, Rourkela), accessed November 15, 2013, <http://ethesis.nitr/kl.ac.in/2699/1/thesis.pdf>, 29.

7. Chromite is a common component of the materials used for producing stainless steel tools, chrome plating, ball bearings, and the inner linings of weapon barrels.<sup>275</sup>
8. Clay is very heat-resistant and insulating, and is a component commonly used in making bricks, cement, cooking pots, porcelain, wall and floor tiles, and drainage pipes.<sup>276</sup>
9. Coal is used as a fuel by being burned in systems that produce electricity; combined with other materials to create steel, cement, and liquid fuel; and is a valuable import and export throughout the world.<sup>277</sup>
10. Cobalt is a common component of alloys used to produce electroplating that give objects an attractive surface and resistance to oxidization.<sup>278</sup>
11. Copper is a major component of ship sheathing, roofing materials, ornamental and decorative products, piping, electrical wiring, heating and air conditioning system parts, and coinage.<sup>279</sup>
12. Dolomite's most common use is for construction purposes, including being crushed for road base and underlayment, and as an aggregate for concrete, asphalt, and railroad ballasts; and as a component of cement mixtures that are cut into dimension stones. It is also used as a feed additive for livestock; an acid neutralizer in the chemicals and mining industry; and an ingredient for the production of glass, bricks, and ceramics.<sup>280</sup>
13. Emeralds are commonly used as ornamental jewelry, and for decorative materials that are not worn; and among superstitious populations, used for their perceived healing and "magical" powers.<sup>281</sup>
14. Fluorite is often combined with other minerals while used in the metallurgical, ceramics, chemical, optical, and engraving industries. In particular, fluorspar (a product of fluorite) is used to make glazes and treatments that produce hard-glossy and opalescent surfaces, and objects appear more attractive and durable. Products that include fluorite as a

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<sup>275</sup> "Chromite," accessed November 7, 2013, <http://geology.com/minerals/chromite.shtml>.

<sup>276</sup> Earth Science, "London's Geology, Clay and Clay Minerals," accessed on November 15, 2013, <http://www.ucl.ac.uk/es/impact/geology/london/ucl/materials/clay>.

<sup>277</sup> World Coal Association, "Uses of Coal," accessed November 15, 2013, <http://www.worldcoal.org/coal/uses-of-coal/>.

<sup>278</sup> Jefferson Lab, "The Element Cobalt," accessed November 7, 2013, <http://education.jlab.org/itselemental/ele027.html>.

<sup>279</sup> Taylor et al., *Summary of the Aynak*, 76; Lindsey Taylor, "Smooth Operator-Talc Gets Specialized Growth," *Industrial Minerals*, 428 (May, 2003): 24–33.

<sup>280</sup> "Dolomite," accessed November 15, 2013, <http://geology.com/minerals/dolomite.shtml>.

<sup>281</sup> Gemstone Education, "The Uses of Emerald," accessed November 15, 2013, [http://www.gemstoneeducation.com/Emerald\\_2.htm](http://www.gemstoneeducation.com/Emerald_2.htm).

component are foam countertops, specialty glasses, ceramics, enamelware, and Teflon® coated cookware. The most common bulk usage of fluorspar is for making iron, steel, and other metals.<sup>282</sup>

15. Galena is an ore that often contains lead and silver.<sup>283</sup>
16. Gold is a major component of jewelry, electrical wiring and circuitry, conductors in items such as computers and smart phones, and dental crowns; and formed into bullion and coins for collectors and investment purposes. Additionally, gold is used in treating a small number of medical conditions such as rheumatoid arthritis and cancer; and during space exploration due to the metal's durability.<sup>284</sup>
17. Granite is a very common component of statues, sculptures and their bases; structural and veneer building stones; architectural trim; paving and curbstones; and grave markers.<sup>285</sup>
18. Gypsum is a component of common building materials, such as wallboard, cement, and various types of plaster. Gypsum is also used in soil conditioning, as a hardener of Portland cement, and for a variety of ornamental purposes.<sup>286</sup>
19. Iron is a primary component of steel and other materials used for building railroad tracks, bridges, skyscrapers, automobiles, aircrafts, ships, heavy carriers and machineries; cookware due its higher heat tolerances; and stainless steel for kitchen cutlery and appliances.<sup>287</sup>
20. Laterite is clay and rock, most often red in color, and is commonly used to produce larger bricks for construction, and when crushed, as gravel for road surfacing. This type of rock, for its porous characteristics, is also used for developing artificial aquifers in rural areas.<sup>288</sup>
21. Lead is an important component of lead-acid batteries, ammunition, oxides in glass and ceramics, casting metals, and metal sheeting.<sup>289</sup>

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<sup>282</sup> "Fluorite (Also Known as Fluorspar)," accessed November 15, 2013, <http://geology.com/minerals/fluorite.shtml>.

<sup>283</sup> "Galena," accessed November 15, 2013, <http://geology.com/minerals/galena.shtml>.

<sup>284</sup> "The Many Uses of Gold," accessed November 7, 2013, <http://geology.com/minerals/gold/uses-of-gold.shtml>.

<sup>285</sup> U.S. General Services Administration (GSA), "Granite: Characteristics, Uses and Problems," accessed November 15, 2013, <http://www.gsa.gov/portal/content/111938>.

<sup>286</sup> "Gypsum," accessed November 15, 2013, <http://geology.com/minerals/gypsum.shtml>.

<sup>287</sup> "Uses of Iron," accessed November 7, 2013, <http://www.usesof.net/uses-of-iron.html>.

<sup>288</sup> J. S. Nogami and D. F. Villibor, "Use of Laterite Fine-grained Soils in Road Pavement Base courses," *Geotechnical & Geological Engineering*, 9, no. 3–4 (September–December 1991): 167–182, accessed November 7, 2013, <http://link.springer.com/article/10.1007percent2FBF00881739#>.

<sup>289</sup> "Uses of Lead," accessed November 15, 2013, <http://geology.com/usgs/lead/>.

22. Lithium-pegmatite contains lithium. Lithium is a component of medicines that treat mental illnesses; medically-related enzymes, hormones, and vitamins; and aluminum, greases, castings, thermoplastics, ceramics and glasses, aluminum, and long-lasting batteries.<sup>290</sup>
23. Marble is primarily used for outdoor sculptures and their bases; and components of exterior walls, veneers, and flooring in architecture.<sup>291</sup>
24. Mercury is used independently or mixed with other metals and chemicals to produce advertising and road signs, electrical switches, thermometers, barometers, diffusion pumps, pesticides, batteries, catalysts, and tooth repair material.<sup>292</sup>
25. Phosphates are used for their functionality in water-based paints and coatings; in processing various ceramic products; treating potable water; in cleaning solutions to reduce mildew and stains on vinyl siding; and in an acidic form, to polish aluminum and aluminum alloys.<sup>293</sup>
26. Phosphorous is widely used in agriculture and an essential component in fertilizers, feed, and pesticides; and a other items such as explosives, nerve agents, friction matches, fireworks, toothpaste, and detergents.<sup>294</sup>
27. Platinum is a component of catalytic converters found in automobiles, laboratory equipment, electrical contacts and electrodes, thermometers, dental equipment, and jewelry; and formed into bullion and coins for collectors and investment purposes.<sup>295</sup>
28. Quartz is a common component of various types of glasses; when finely ground, is used for sandblasting, as a flux for smelting metals, and as grit for sanding and sawing; and scouring cleaners and grinding equipment.<sup>296</sup>
29. Beryllium is used as an alloying agent in producing beryllium copper, which is used for developing springs, electrical contacts, and spot-welding electrodes and non-sparking tools; structural materials for high-speed

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<sup>290</sup> Rodinialithium, “Main Uses of Lithium,” accessed November 7, 2013, [http://rodinialithium.com/lithium/lithium\\_uses/](http://rodinialithium.com/lithium/lithium_uses/).

<sup>291</sup> GSA, “Marble: Characteristics, Uses and Problems,” accessed November 8, 2013, <http://www.gsa.gov/portal/content/111858>.

<sup>292</sup> “Periodic Table, Mercury,” accessed November 15, 2013, <http://www.rsc.org/periodic-table/element/80/mercury>.

<sup>293</sup> “Phosphate Facts,” accessed November 12, 2013, <http://www.phosphatefacts.org/index/asp>.

<sup>294</sup> European Commission, “Environment, Use of Phosphorous and its Resource Availability,” accessed November 15, 2013, <http://ec.europa.eu/environment/natres/phosphorous.htm>.

<sup>295</sup> “Platinum: Uses,” accessed November 7, 2013, <https://www.webelements.com/platinum/uses.html>.

<sup>296</sup> “Quartz,” accessed November 7, 2013, <http://geology.com/minerals/quartz.shtml>.

aircraft, missiles, and spacecraft and communications satellites; and in nuclear reactors as a reflector or moderator.<sup>297</sup>

30. Cesium, due to its properties, has been used in electron tubes, photoelectric cells, and as a catalyst.<sup>298</sup>
31. Niobium is a partial component of the arc-welding rods used in joining certain grades of stainless steel; material is used in developing advanced airframes for spacecraft, and superconductive magnetics in strong magnetic fields for large-scale generation of electricity; and is commonly used in making jewelry.<sup>299</sup>
32. Salt is used for numerous purposes, including: as a flux to purify aluminum; in bread and pastries; to can and curing meats and vegetables; in caustic sodas and chlorines to form brines; as a component for making cheeses; being poured down drill holes during drilling operations conducted in sandy terrain to stop drill-hole walls from collapsing inward; for general cooking; curing hides of animals; as a component used in making soaps and glycerine; in swimming pools for water treatment; for use as a condiment; the dyeing of textiles; and water softening.<sup>300</sup>
33. Sand and gravel are used for a number of reasons, some being: components for making concrete, asphalt, blocks, bricks, pipes, roof shingles, glass, coating icy roads and sidewalks for traction, building railroad ballasts; water filtration techniques; and as abrasives.<sup>301</sup>
34. Silver is commonly used independently or mixed with other chemicals and metals to produce jewelry, silverware, monetary coinage, dental alloys, mirrors, bactericides, solder and brazing alloys, electrical contacts, high capacity silver-zinc and silver-cadmium batteries, paints for printed circuits, and solar panels. Additionally, silver is used in photography, mirror production, research; and formed into bullion and coins for collectors and investment purposes.<sup>302</sup>

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<sup>297</sup> "Periodic Table, Beryllium," accessed November 15, 2013, <http://www.rsc.org/periodic-table/element/4/beryllium>.

<sup>298</sup> "Periodic Table, Cesium," accessed November 15, 2013, <http://www.rsc.org/periodic-table/element/55/caesium>.

<sup>299</sup> Los Alamos National Laboratory, "Niobium," accessed November 15, 2013, <http://periodic.lanl.gov/41.shtml>.

<sup>300</sup> WA Salt Supply, "Salt and Its Uses," accessed November 8, 2013, <http://www.wasalt.com.au/SaltUses.html>.

<sup>301</sup> Minerals Education Coalition, "Sand and Gravel," accessed November 13, 2013, <http://www.mineralseducationcoalition.org/minerals/sand-and-gravel>.

<sup>302</sup> Silver Users Association, "About Silver," accessed November 15, 2013, <http://www.silverusersassociation.org/silver/commonuses.shtml>.

35. Sphalerite is the primary ore of zinc, and is also mined for the small amounts of other materials (indium, cadmium, germanium, and gallium) commonly found in it.<sup>303</sup>
36. Sulfur is very commonly used to make sulfuric acid, often for the metals mining industry; and also as a component used in the production of fertilizers, petroleum-based (rubber) products, and organic and inorganic chemicals.<sup>304</sup>
37. Talc-magnesite contains a high concentration of talc, which is a primary component of talcum powder, and partial component of cement, fillers, fertilizers, ceramics, paints, paper, plastics, roofing materials, and electronic parts.<sup>305</sup>
38. Tantalum is a common component of wires and powders used to develop digital capacitors. Capacitors that include tantalum are used in digital space-sensitive and high-end telecommunications, data storage, and implantable medical devices.<sup>306</sup>
39. Tennantite is most commonly combined with other chemicals for use as a corrosive substance for metals decomposition, and also to determine the composition and locations of other natural and mineral resources.<sup>307</sup>
40. Tin is a common component of materials used for lighting devices, such as lanterns, candle shields, wall sconces, and mirror frames; roofing and building products used for water protection and channeling, such as flashings, coverings, shingles, tiles, sheet metals, and shutters; protective fire (“fireproof”) products; and ornamental products for homes and buildings.<sup>308</sup>
41. Travertine is rock most commonly used as a material for covering the exteriors of religious temples, paving patios and garden paths, wall cladding and indoor flooring; and to cover any surfaces likely to be exposed to outdoor elements for long periods of time.<sup>309</sup>

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<sup>303</sup> “Sphalerite,” accessed November 15, 2013, <http://geology.com/minerals/sphalerite.shtml>.

<sup>304</sup> Minerals Education Coalition, “Sulfur,” accessed November 13, 2013, <http://www.mineralseducationcoalition.org/minerals/sulfur>.

<sup>305</sup> “Talc: The Softest Mineral,” accessed November 7, 2013, <http://geology.com/minerals/talc.shtml>.

<sup>306</sup> Global Advanced Metals, “Applications,” accessed November 15, 2013, <http://globaladvancedmetals.com/about-tantalum/applications.aspx>.

<sup>307</sup> Sandro Fadda, Maddalena Fiori, and Silvia Maria Grillo, “Chemical Variations in Tetrahedrite-tennantite Minerals from the Furtei Epithermal Au Deposits,” Sardinia, Italy: Mineral Zoning and Ore Fluids Evolution,” *Geochemistry, Mineralogy, and Petrology*, 43, Sofia (2005), accessed November 15, 2013, [http://www.geology.bas.bg/mineralogy/gmp\\_files/gmp43/Fadda.pdf](http://www.geology.bas.bg/mineralogy/gmp_files/gmp43/Fadda.pdf).

<sup>308</sup> GSA, “Tin: Characteristics, Uses and Problems,” accessed November 15, 2013, <http://www.gsa.gov/portal/content/111762>.

<sup>309</sup> “What is Travertine?” accessed November 7, 2013, <http://what-is-travertine.com>.

42. Tungsten is common component of cutting tools used in drilling for oil and gas, mining and construction; wear-resistant materials for metalworking; more recently jewelry; and is mixed with carbon to make a strong and resistant material—tungsten carbide.<sup>310</sup>
43. Uranium is often used by militaries as a component of high-density munitions penetrators, shielding material for transporting radioactive materials, and fuel for nuclear submarines; and by civilians primarily for the use fuel in nuclear power plants.<sup>311</sup>
44. Zinc has anticorrosive properties and is commonly used for galvanizing items susceptible to water damage, such as automobile parts, construction equipment, and outdoor electrical components; and is commonly used for separating gold from other minerals; and often a component of rubber and protective skin ointments.<sup>312</sup>

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<sup>310</sup> Minerals Education Coalition, “Tungsten,” accessed November 15, 2013, <http://www.mineralseducationcoalition.org/minerals/tungsten>.

<sup>311</sup> Uranium Council, “Uranium Facts,” Australian Government, Department of Resources, Energy, and Tourism, accessed November 7, 2013, <http://www.ret.gov.au/resources/Documents/Mining/uranium/1UsesforUranium.pdf>.

<sup>312</sup> “Uses of Zinc, the Metal That is Key to Preventing Corrosion,” accessed November 15, 2013, <http://geology.com/usgs/uses-of-zinc/>.

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